The Principles and Practice of Filling Teeth with Porcelain.*

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I. The Formation of Matrices for Porcelain Inlays.

Before describing the methods of forming matrices, let us consider the materials that are used for this purpose. Such a consideration shows that gold, platinum and platinous gold are used for the construction of matrices, and that each material has properties characteristic of it. In formulating a table for comparison of these three metals, the numbers used for such comparison refer to this particular table and not to the general table used in the comparison of metals.

Gold. Fusing point 2016° F. Malleability, first rank; tenacity, third rank; pliability, first rank; ease of annealing, first rank.

Platinum. Fusing point above 3500° F. Malleability, third rank; tenacity, first rank; pliability, third rank, and ease of annealing, third rank.

Platinous Gold. (One to three per cent): Fusing point, approximately from 2030° to 2040 F. Malleability, second rank; tenacity, second rank; pliability, second rank; and ease of annealing, equal to that of gold.

Gold and platinous gold can only be used to advantage with low fusing, while platinum can be used with high or low fusing porcelains. Matrices can be constructed of platinous gold as thin as 3/10000 of an inch, while pure gold thinner than 4/10000 of an inch can not be manipulated to good advantage. They may be constructed of platinum foil as thin as 1/2000 of an inch, but the best results are generally obtained by the use of foil 1/1000 of an inch in thickness.

There are cases in which pure gold as thin as 4/10000 of an inch may be used for the construction of a matrix, for small cavities of free accessibility, but of this thickness, gold is so pliable that the danger of

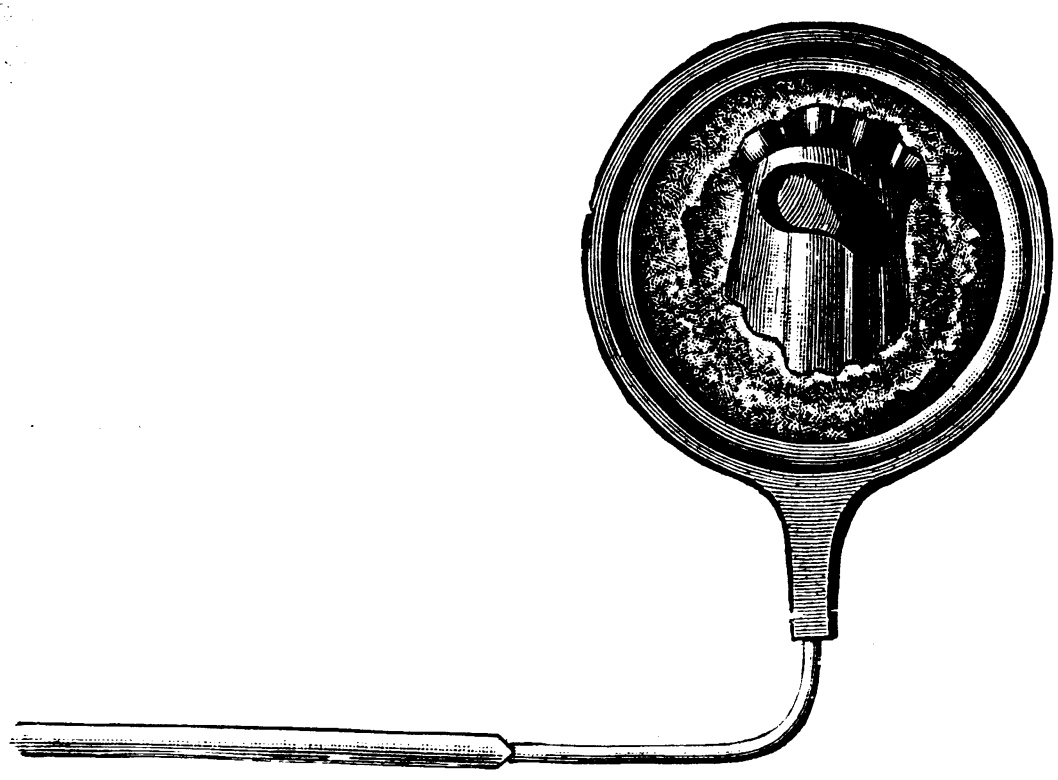


FIG. 64.

distortion precludes its use in cavities where the matrix can not be easily removed. Since the pliability of metals decreases, and their tenacity increases in direct ratio to their thickness, the gauge of the metal used should be determined largely by the conditions presented by the cavity in hand.

Of the metals used for matrices, the author believes platinum to be the best for the construction of matrices of large cavities. While gold and platinous gold are more pliable than platinum and are apparently more easily manipulated, the tendency of a matrix made of them to distortion, either in the process of withdrawal or during the process of fusing the porcelain, seems to be somewhat of a disadvantage. Some operators invest matrices, made of thin foil, to prevent the porcelain from changing their shape (Fig. 64), but the time consumed in investing the matrix and in cooling it after each baking will be greater in total than the additional time consumed for the construction of a platinum matrix. Platinous gold has more elasticity than pure gold, but is more liable to tear during the process of swaging or burnishing.

Annealing Matrix Metals.

Gold and platinous gold are annealed by the heat of a gas or alcohol flame. But extreme care must be exercised to prevent these metals from partially fusing during this process. The metals should be passed through the flame several times and should never be held in an intensely hot flame for any considerable length of time, because of the comparatively low temperature at which they fuse. Platinum should be annealed in the furnace or in an oxyhydrogen flame. The method of annealing it in a gas or alcohol flame is to be condemned; for the comparatively low heat obtained from these flames seems to render the metal slightly brittle. It should be heated in the furnace to about 2200° F. for two or three minutes, by which process it becomes more pliable. There is no particular advantage in annealing the matrix several times during the process of construction. The foil should be made pliable previous to beginning the formation of the matrix, and there is no need of further annealing unless the foil loses its pliability during the construction of the matrix.

Methods of Constructing Matrices.

There are three general methods of constructing matrices for cavities.

(1) Burnishing directly into the cavity.
(2) Swaging into a model of the cavity.
(3) Swaging over an impression of the cavity.

The method of burnishing the foil directly into the cavity seems to be the most popular, and the author believes it to be the best for the construction of matrices for simple approximal and most approximo-incisal cavities. If the foil is burnished directly into the cavity, it gives a sharper matrix than can be made by swaging directly into the models of many cavities. Matrices can be removed from simple approximal cavities where there is a moderate amount of space, with no danger of distortion, while an impression of the cavity could not be removed without additional space or sacrifice of tooth structure. A matrix burnished into a cavity usually covers more of the surface of the tooth than one swaged into a model, thereby aiding the operator when applying the porcelain, to obtain better representation of tooth contour.

There have been a number of special instruments for burnishing matrices placed on the market. It has been the author's experience, however, that many of them are useless and that a large supply of burnishers is more of a hindrance than a help in this work. He has found that a pair of special inlay matrix pliers (Fig. 65), four ball burnishers (Fig. 66), one blade burnisher (Fig. 67), one special marginal burnisher (Fig.

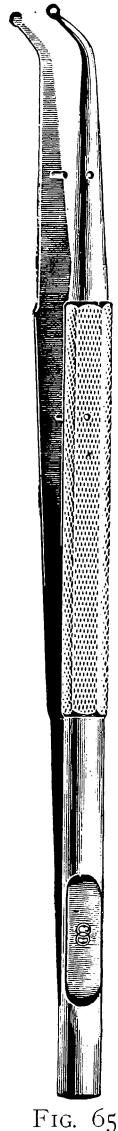


FIG. 65.

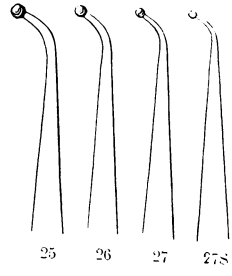


FIG. 66.

FIG. 67.

FIG. 68.

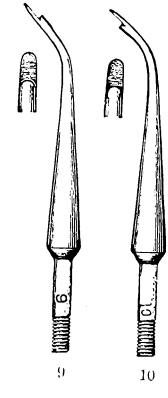


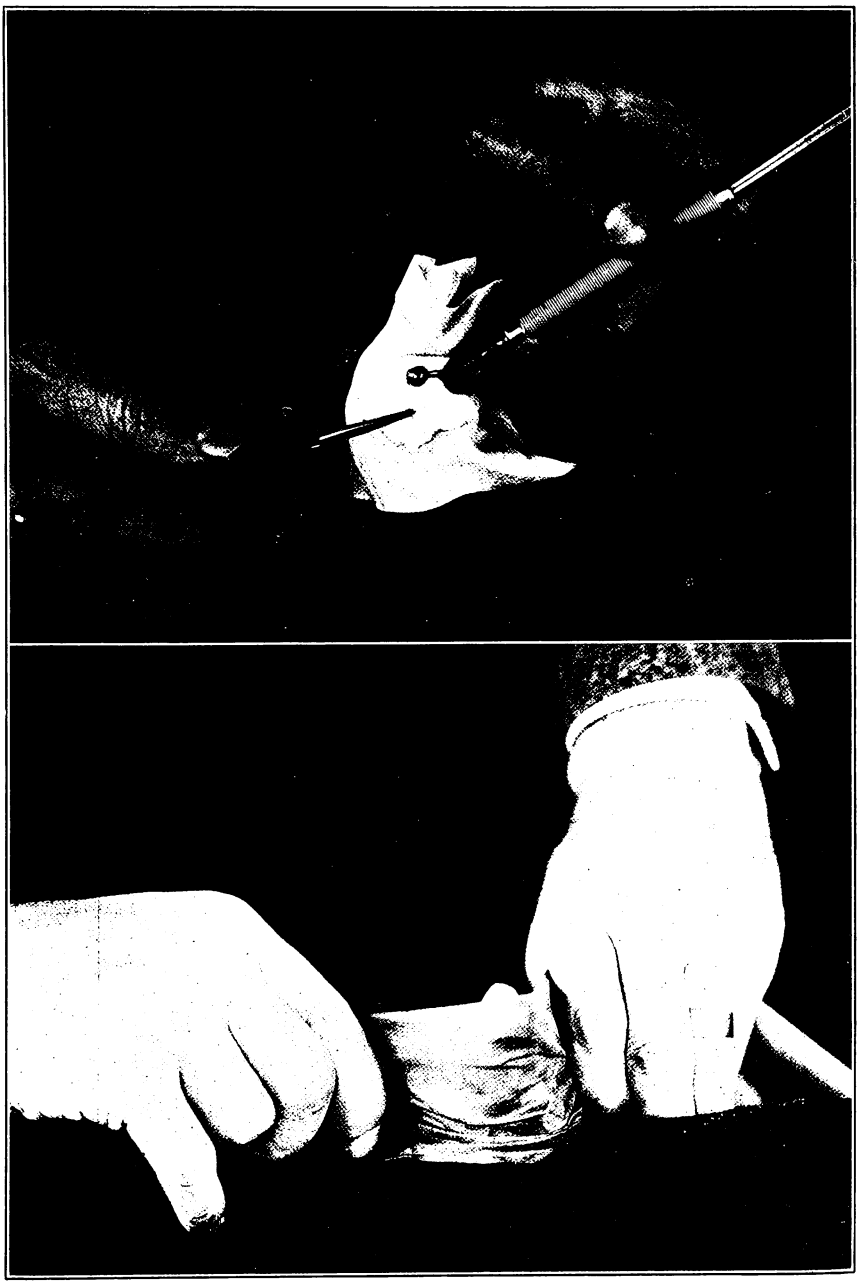
FIG. 69.

68), and two gingival marginal burnishers (Fig. 69) meet the requirements in a satisfactory manner. The efficiency of the gingival marginal burnishers is increased by grinding the lip of the instrument until it is about one-third its original length.

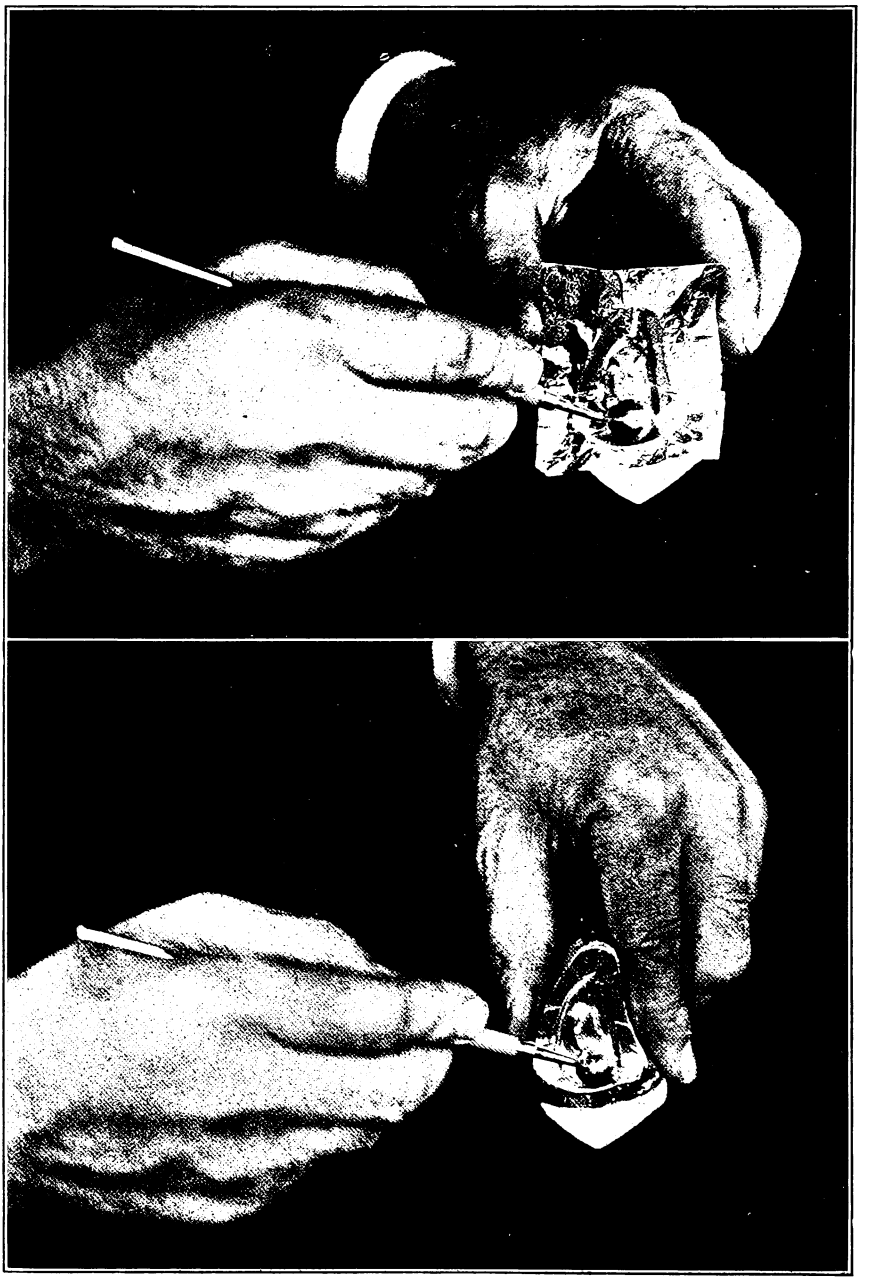
Technique of Burnishing Matrices.

The technique of burnishing matrices is dependent upon the material used and the thickness of this material. If thin gold is used for simple approximal and approximo-incisal cavities, the metal should be surrounded by goldbeater's skin or china silk, and forced into the cavity with pellets of spunk or cotton (Fig. 70). After the foil has been forced to the seat and to the axial walls of the cavity it is then turned over the margins by wiping the metal toward the margins with a pledget of cotton and by pressing toward the walls of the cavity. After removing the goldbeater's skin or china silk the matrix is again inserted into the cavity and is then filled with paraffin and wax, which is forced gently toward the walls of the cavity with large burnishers. If the matrix is for an approximal cavity a strip of rubber dam is then placed over it with the wax in position and used as a means of swaging the foil to the margins (Fig. 71). After this the matrix is removed and the wax absorbed from it by placing a roll of cotton over the wax and heating it to its melting point. The cotton absorbs the molten wax and leaves a clean matrix.

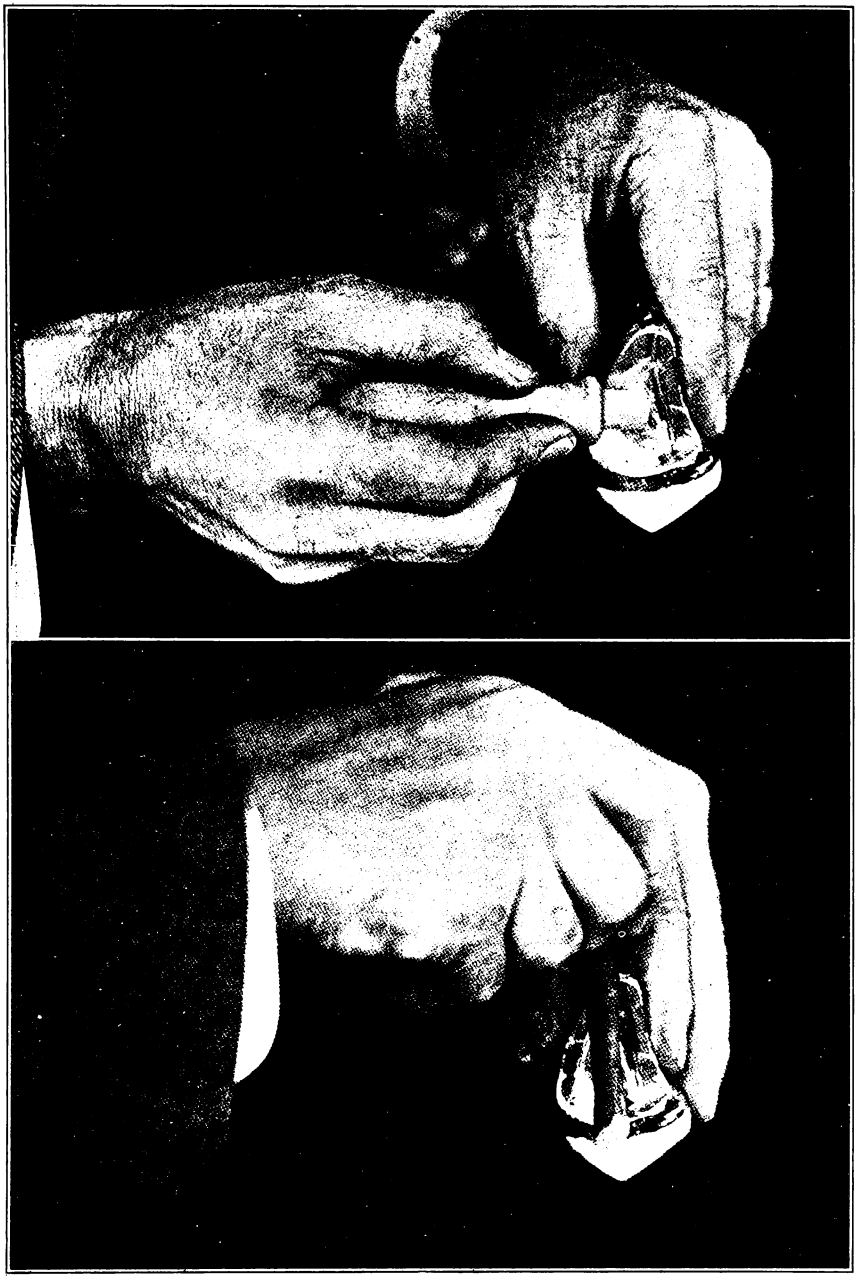
When matrices are constructed of gold, platinous gold or platinum foil 1/2000 of an inch or heavier, most of the burnishing should be done directly on the metal with proper burnishers (Figs. 66 to 69). A piece of foil large enough to be held between the thumb and forefinger without interfering with the burnishing is placed over the cavity (Fig. 72). It is pressed into the cavity with a pledget of cotton; then with a large ball burnisher the metal is gently and gradually forced into the cavity, when smaller burnishers are used to gradually conform the foil to the seat. A strip of heavy rubber dam is then placed over the matrix, which is filled with tightly rolled cotton, and with direct pressure, the foil is turned over the margins of the cavity and the adjacent surfaces of the tooth, to prevent wrinkling of the matrix at the margins (Fig. 71). The matrix is now withdrawn from the cavity and the surplus metal is trimmed so that its edges will rest uniformly on a flat surface. It is now replaced and held firmly against the walls of the tooth with the thumb and forefinger and reburnished with a series of ball burnishers beginning with the largest, then continuing with smaller ones until the matrix conforms to all walls of the cavity and its margins (Fig. 73). The margins of the matrix are now burnished with the special marginal burnisher (Figs. 68 and 74) until the foil is closely conformed to the cavity margins. If the cavity extend to or beneath the gum the foil may be made to overlap and conform to the gingival margin by the use of a pair of special gingival marginal burnishers (Figs. 69 and 75). The matrix



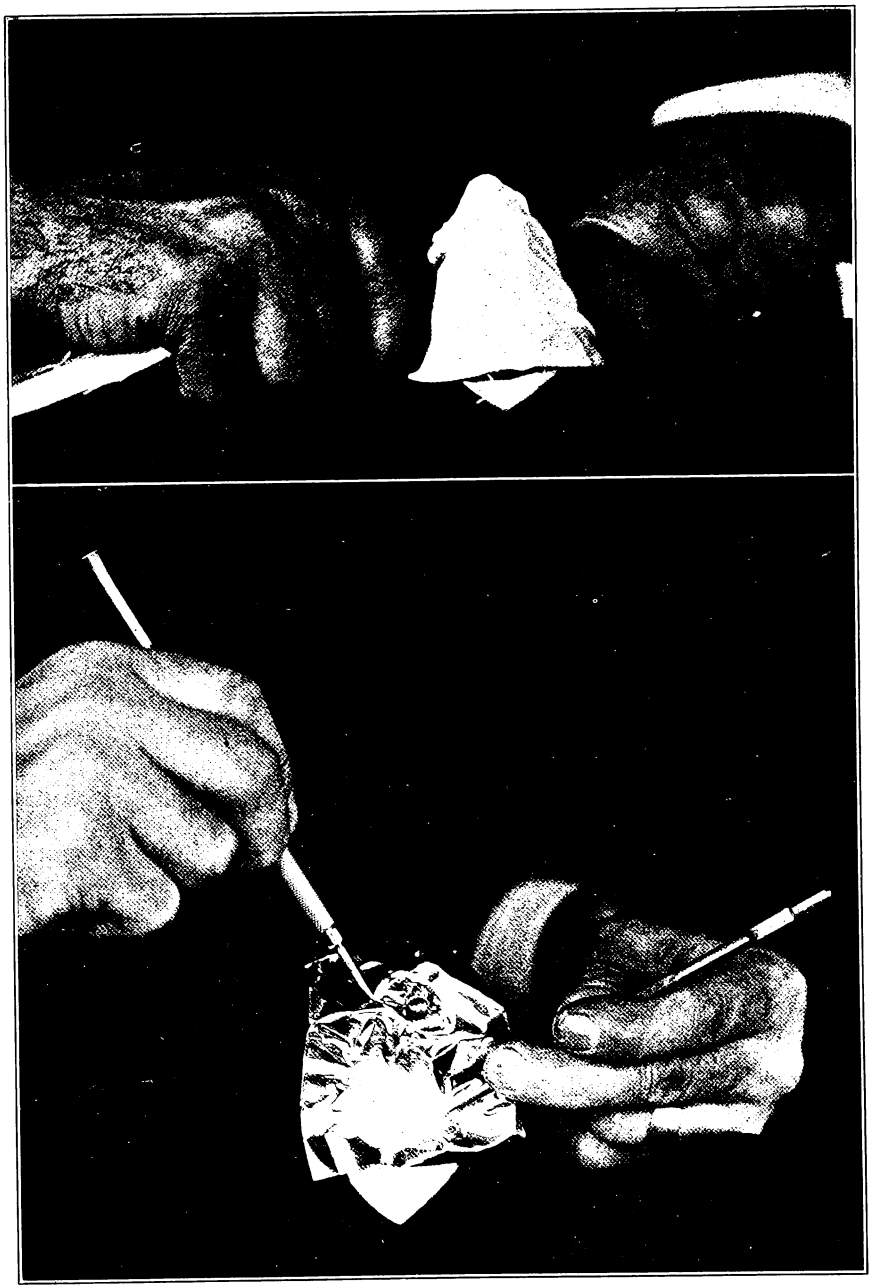
FIGS. 70 AND 71.



FIGS. 72 AND 73.



FIGS. 74 AND 75.



FIGS. 76 AND 77.

should now be annealed, then placed into the cavity and filled with gum camphor or hard wax. If gum camphor is used, a piece of gum that will fill the cavity is placed into the matrix and is used as a means of swaging it to the walls and margins of the cavity with the assistance of blade burnishers. A piece of heavy tape is then placed over the camphor and pulled directly toward the margins of the cavity (Fig. 76). This swages the metal under direct and uniform pressure and forces the matrix to conform to the margins of the cavity at all points. If hard wax is used in place of camphor it should be made slightly plastic, then immersed in cold water to destroy its adhesiveness. It should be manipulated between the thumb and fingers, which should have been previously

FIG. 78.

immersed in cold water. A small ball of wax is then placed into the matrix and forced into place with a blade burnisher. The tape should be moistened before placing it over the wax for the final swaging. The wax has an advantage over camphor in that it will adhere better to the walls of the matrix, thereby assisting in the removal of many matrices. Either camphor or wax may be burned from the matrix, leaving no residue.

The following additional details in the technique of forming matrices for larger approximo-incisal cavities with irregular marginal outlines should be considered. In case the margins present one or more reverse curves, the matrix should be burnished differently from the method used in those cavities in which the marginal outlines form a straight line. After the foil is irregularly burnished to the cavity it chould be conformed to the margins of the step with the shank of a small ball burnisher (Fig. 77). The matrix is then filled with hard wax and the foil turned over the margins of the cavity in the tooth with rubber dam. The force should

be directed in such manner that uniform pressure is made on the foil to prevent its overlapping at the margins. The foil should then be forced into the reverse curves with the marginal burnisher. The matrix should now be trimmed so that its edges will rest uniformly on a flat surface. It is then annealed and adjusted to the cavity for final swaging. This is done by filling the matrix flush to the margins with hard wax (Fig. 78)

FIG. 79.

and swaging with tape. Care should be exercised to exert uniform pressure on the margins of the matrix during the process of swaging (Fig. 79).

It is probable that the seat of the matrix will be torn during the process of burnishing (Fig. 80 A), but such tears in the seat of a matrix do not affect its efficiency. Sometimes, moreover, the matrix may tear at some point along the labial or lingual margins (Fig. 80 B). If this tear is small, it need be considered of no consequence. Large perforations in the region of the seat and small ones along the margins of the matrices for high fusing porcelain may be bridged before applying the porcelain by painting the cavity side of the matrix with a thick solution

of shellac (Fig. 81 A), which prevents porcelain from flowing through the perforations, and burns from the matrix without leaving a residue. It is advisable to coat a perforation at the margin before each application of the porcelain in order to insure a smooth margin of porcelain after the matrix has been removed.

Because of the irregular formation of some approximo-incisal, and the inaccessibility of many approximo-occlusal cavities, the method of first swaging the foil into a model of the cavity is particularly indicated. Although many porcelain workers construct all inlays by swaging matrices

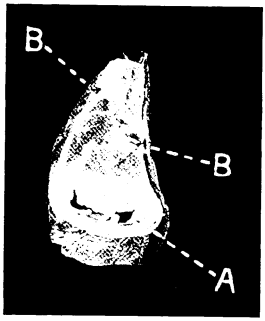


FIG. 80.

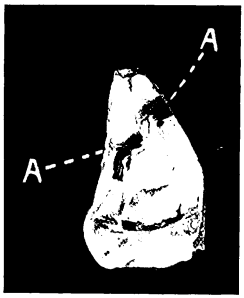


FIG. 81.

into models of cavities, the author believes it is possible to construct more accurately fitting inlays for simple approximal and most of the approximo-incisal cavities by burnishing the foil directly into the cavity or by swaging first into the model and then burnishing the foil into the cavity. However, he believes more accurately fitting matrices may be constructed for large approximo-occlusal cavities by relying wholly on swaging into models because of the difficulty with which matrices are burnished into such cavities in the mouth. Still, he admits that it is almost impossible for him to construct absolutely accurate models unless they are made under pressure, and he believes that, with few exceptions, the models not constructed under pressure, as made by most dentists, are not absolute positives of the cavities which they represent.

Impression Methods.

There are many materials used for taking impressions of cavities. Those which have received the most consideration are: Dental lac, modeling compound, Klewe & Company's impression material, gutta percha and the oxyphosphate cements. Dental lac and

modeling compound are used probably more than all of the other materials. They have the advantage in that they are more easily manipulated and require less time for taking the impression. Modeling compound should be made plastic by moist, and the other materials by dry heat. An impression tray, the design of (Fig. 82) makes a valuable adjunct for confining the material to the desired location. It not only prevents the impression material from crowding into the interproximal space, but

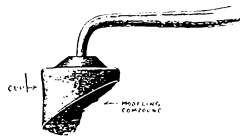


FIG. 82.

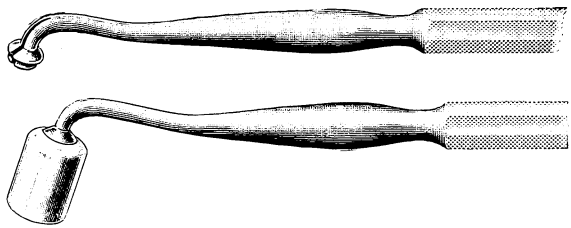


FIG. 83.

holds it to proper conformation along the axial walls of the cavity. These trays are constructed from a stock of copper or German silver thimbles and may be made to conform to the tooth for each operation with a loss of but very little time. The tray should be so fitted that the length in the occluso-gingival direction will permit its edge to extend about 1 mm. beyond the gingival margin of the cavity. The handle (Fig. 83) which should be used with the tray permits it to be manipulated more easily and prevents obstruction to view during the process of fitting.

When any of the above mentioned materials are to be used for taking the impression, a small pellet of the material is made plastic and placed in the impression tray. The material should be passed through the flame to give its surface a glazed-like appearance. It is then pressed into the cavity, which is moist, with the pressure directed on a line with the axis of the tooth, and then chilled quickly and removed. Gutta percha does

not give so sharp an impression as modeling compound. It requires more heat to make it plastic and more pressure to force it to the walls of the cavity. Its use may be indicated, however, in those gingival cavities extending beneath the gum margin, where a moderate amount of force is required to press the gum from the cavity in order that an accurate impression of the gingival wall may be obtained.

If oxyphosphate of zinc cement is used for an impression material it should be mixed to a putty-like consistency, kneaded between the thumb and finger, and then placed in the impression tray. The material

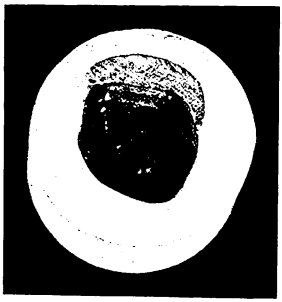


FIG. 84.

should be forced into the cavity, in which it should remain until the cement has thoroughly hardened. The impression may fracture or change its form if the cement is removed while it is in a semi-plastic state.

Models of Cavities.

Models of cavities may be made in amalgam, oxyphosphate of zinc, inlay metal (a preparation prepared by the S. S. White Company, which is similar to Spence's metal) and low fusing alloys. Each of these materials has some advantages, and if used when indicated, will meet the requirements.

Models constructed of amalgam present a sharp outline and seem to be as accurate as it is possible to obtain them unless they are constructed under pressure. The advantage of accuracy is the only point in its favor. It requires from four to six hours for the amalgam to thoroughly set, and unless it is manipulated at the proper consistency it gives a granular surface over which the matrix is to be swaged. There is always an element of uncertainty regarding the accuracy of the amalgam model, and the operator can not be relieved of the suspense until he has separated it from the impression.

Oxyphosphate of zinc may be used for constructing models, but the difficulty of securing accurate models unless constructed under pressure causes the element of uncertainty to be an objection. There are, however, these advantages over amalgam: The model may be separated from the impression in a comparativly short time, and if it is faulty another one may be constructed without delay, and the operator is not required to wait several hours before the matrix can be swaged.

The inlay metal is manipulated differently from amalgam, or the oxyphosphate cements. It fuses at a comparatively low temperature, and is cast into the impression. It is largely composed of sulphur and graphite, and if overheated it ignites, giving off the disagreeable odor of sulphur. If the metal is permitted to burn, its composition is changed and its properties are affected. It gives a sharp casting, and models constructed of this metal are fairly accurate. Low fusing allows, composed of tin, lead, bismuth and cadium, may be used for constructing models. They are particularly indicated in those cases where the matrix is to be burnished into the cavity after it has been swaged. They cast with a sharp imprint, and it requires but a few moments to construct a model with these alloys.

The technique of constructing models varies, and each material requires a method of constructing peculiar to it. If models are to be constructed of amalgam or cement without pressure, the impression should be invested with the impression of the cavity upward, in plaster of Paris to reinforce the frail walls (Fig. 84). This also gives a base which tends to hold the impression steady while the material for the model is packed into it. A rubber ring one inch in diameter and one-half inch long, is filled with plaster, mixed to a thick consistency, and then the impression is forced into the plaster so that all except the imprint of the cavity and the walls of the tooth are covered.

Amalgam Models.

When amalgam is to be used for constructing a model, it should be mixed so that it has ample plasticity after a portion of the mercury has been expressed. It should be forced into the deep depressions of the impression with small flat-faced pluggers, and the excess mercury should be removed with cotton. The bulk of the impression should be filled by condensing the amalgam with large flat-faced pluggers. This prevents the "chopping" of the amalgam during the process of condensation and forces the excess mercury to the surface, which should be removed with pledgets of cotton or spunk.

Oxyphosphate Models.

If oxyphosphate of zinc is used for a model it should be spatulated to a putty-like consistency and kneaded between the thumb and finger, until all air bubbles are excluded. The cement should be formed

into an irregular conical shaped mass and forced into the impression with the thumbs and large burnishers. If the model is so constructed from an impression taken in cement, the impression should be coated with soapstone, and the cement used for the construction of the model should be of different color from that of the impression.

Dr. Roach's Device.

Dr. F. Ewing Roach, of Chicago, has designed a device for making models under pressure (Fig. 85), which simplifies their construction and assists

FIG. 85.

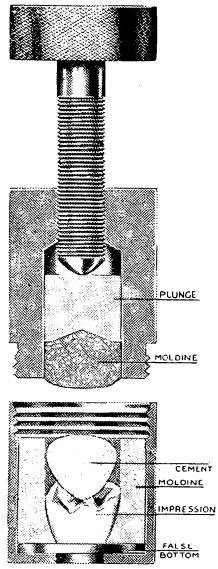


FIG. 86.

in obtaining more accurate models. The impression is invested in the base, which is filled with moldine (Fig. 86). The cement is mixed to a putty-like mass and packed in the impression, then the cylinder, which is filled with moldine, is screwed to the base and the plunger forced toward the base by screwing it in the cylinder. This makes constant and uniform pressure on the model while it is setting, thereby giving a sharper imprint than can be made by packing the material into the impression without constant pressure.

The Author's Device.

When the model is to be constructed of the inlay metal or of a low fusing alloy, the impressions should be oiled and invested in moldine, imbedding all except the impression of the cavity and the walls

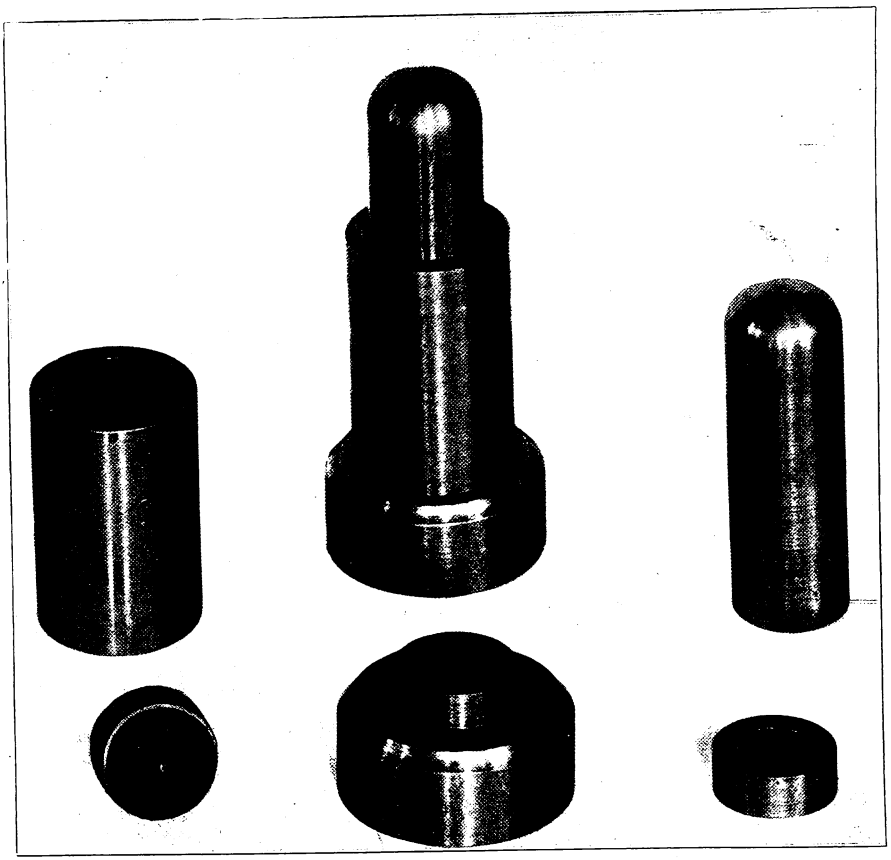


FIG. 87.

adjacent to it. The ring of a swaging device (Fig. 87), which acts as a matrix for the molten metal, should be placed over the impression with its larger opening downward, and with the center of the ring over the center of the impression. Care should be exercised to prevent the inlay metal from becoming overheated, and in case it ignites the flame should be extinguished immediately. The metal should be permitted to cool until it begins to crystalize around the edge of the ladle, then it should be poured into the impression, which has been oiled, through the smaller opening of the ring. If a low fusing alloy is used it should be heated over the flame until only a portion of the metal in the ladle is molten. As soon as the mass becomes liquid it should be cast into the impression by the same method as that employed for casting the inlay metal. In either case the impression should be removed immediately from the

moldine and immersed in cold water. After the metal has thoroughly crystalized the impression is removed from the model by making it plastic. If small particles of the impression material adhere to the model these may be removed by saturating a pledget of cotton with alcohol or chloro-

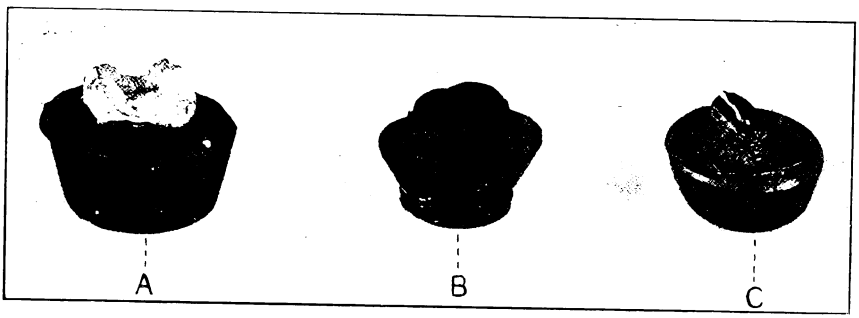


FIG. 88.

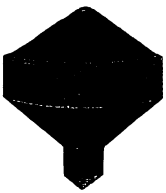


FIG. 89.

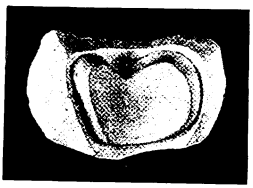


FIG. 90.

form and rubbing it over the model. The ring which acts as a matrix during the process of casting the model so shapes its base that no further investing is required for swaging (Fig. 88 B and C).

The best soft plungers for swaging matrices into models are made of velum rubber, and these are so constructed that they press the foil from the center of the cavity to the margins (Fig. 89). They are constructed by forcing a piece of plastic modeling compound through the cylinder of the swaging device with the metal plunger. The end that conforms to the face of the plunger remains unchanged while the opposite end is carved to any desired form. The modeling composition is then invested in plaster of Paris so that a mould will be constructed in two sections. After the modeling composition has been removed the mould is filled with velum rubber and vulcanized at a temperature of 310° F. for ninety minutes.

Swaging Matrices in Cavity Models.

The technique of constructing a matrix by swaging it into the model of the cavity is as follows: Invest the model in the ring of the swaging device in modeling composition so that the center of the cavity is equidistant from the periphery (Fig. 88 A). An-

neal the foil, then force it into the model of the cavity with ball burnishers. After the foil has been irregularly forced into the model it should be swaged gently with the velum rubber plunger. Remove the matrix from the model and trim to proper size; dust the model with soapstone, applying it with a camel's hair brush, and blowing away the surplus. The

FIG. 91.

matrix is placed into position and given the final swaging. The most delicate step of the operation is removing the matrix from the model, as this must be done in such manner as to prevent distortion.

Swaging Matrices over Impressions.

The method of swaging matrices over impressions of cavities has some followers, and the advocates of this method claim that they can construct more accurately fitting inlays. However, experiments show that the thinnest film to which a layer of cement can be squeezed, under pressure equivalent to that applied in setting inlays, is not much less than 1/2000 of an inch in thickness, so that the inlay, when set with cement, will not absolutely fit the cavity. If simple approximal, approximo-incisal or approximo-occlusal cavities are pre-

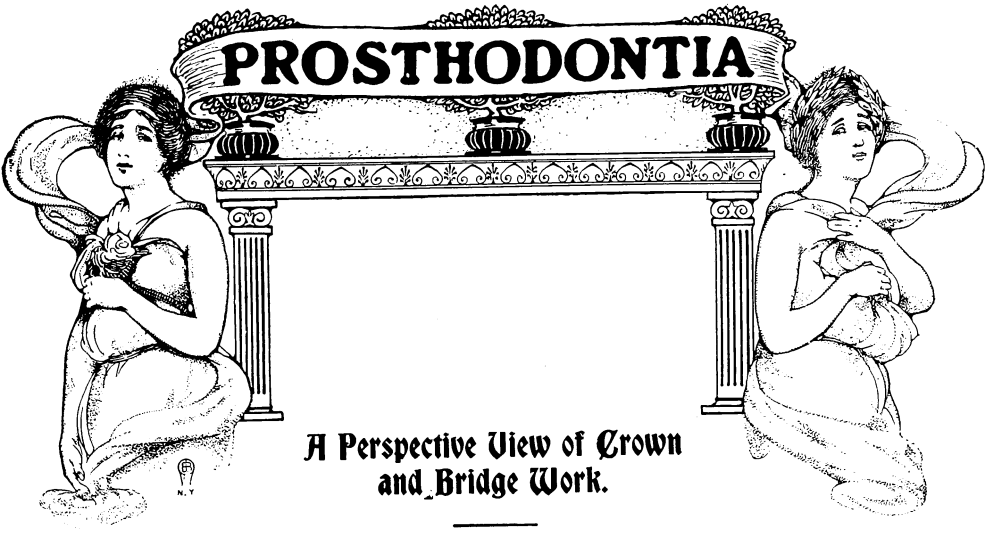
pared with proper marginal form, there will be no perceptible difference in the fit of the inlay, whether it is constructed in a matrix, burnished into the cavity or swaged over an impression of the cavity.

The method of constructing matrices over an impression is particularly indicated for cavities on the labial or buccal surfaces of teeth, or in any form of cavity known as a four-wall cavity. Such forms of cavities can not be prepared so that the matrix can be burnished into the cavity and the inlay compensate for the space of the matrix unless it be constructed with frail margins of porcelain, which lack edge strength, and are so thin that a change of color is noticeable along these margins.

The technique of constructing matrices, by swaging over an impression of the cavity, is as follows: The impression should be taken in cement, which should be mixed to a thick consistency. It should be formed into an irregular conical shaped mass, forced into the cavity and permitted to remain under pressure until it has hardened. To take an impression of a labial or buccal cavity extending beneath the gum margin, mix the cement to a thick consistency. Then with some form of retractor, crowd the gum back and force the cement to place with the fingers, holding it in position until it has hardened.

The impression (Fig. 90) is invested in the ring of the swaging device. A piece of platinum foil not thinner than 1/1000 of an inch is placed over the impression and partially swaged with the velum rubber plunger. The foil is then trimmed to proper shape and placed over the impression and burnished, at the angle formed by the cavity margins and the surface of the tooth, with steel burnishers (Fig. 91). The matrix is then removed and the impression dusted with soapstone; then the matrix is reswaged with a velum rubber plunger which has a flat face. It is then carefully removed without changing its form.

Refitting Matrices. The method of swaging the matrix into a model of the cavity and then burnishing it directly into the cavity as a subsequent operation is particularly indicated for those approximo-occlusal cavities where the cavity extends far beneath the gingival margin and involves a large portion of the occlusal surface. The matrix may be swaged of gold or platinum 1/500 of an inch in thickness. If a heavy material is used for the matrix, there is less danger of warping during the process of fusing. The matrix, however, should become a part of the inlay. After it has been swaged to conform to the model, the foundation of the inlay should be fused, then the matrix placed into the cavity and burnished to conform to the cavity margins. The matrix should be trimmed close to the margins of the cavity after the final fusing, but the final finishing of the margins should not be accomplished until after it has been set.



A Perspective View of Crown and Bridge Work.

By HART J. GOSLEE, D.D.S., Chicago, Ill.

Read before Third, Fourth and Fifth District Societies of New York at Schenectady, Oct. 15, 1907, *and Toronto Dental Society, Toronto, Canada, Nov.* 5, 1907.

In the evolution of the specialty of crown and bridge work the enthusiasm and ingenuity of the profession has resulted in the presentation of a myriad of methods. These encompass so varied a field that the practice in this particular line of work has always been more or less empirical, and, to a large extent, it still so remains.

This is evidenced by the fact that for many years each issue of our journals has teemed with the individual methods of those who had the ability or temerity to write, until he who is eager to keep apace with the progress of the day is now confronted by a bewildering array of procedures. Many of these have possessed, and do possess, merit. Others have proven to be invaluable. Those which have not stood the test of average practicability have soon been abandoned, and yet, *all* have contributed more or less to the wonderful progress of this specialty, and in turn of dentistry as a whole.

While the mental armamentarium of the modern practitioner should embrace a reasonable familiarity with all of those methods which may even possibly be useful, yet the time has arrived when we should begin to systematize our work so as to abandon the obsolete, relegate the indifferent, and improve the really practical.

If this were done to-day, I prophesy that it would be surprising

how many of the procedures now in more or less common use might well be consigned to the garret of the past, and how comparatively few we could get along with. Indeed, I am forced to predict that the practice of the future will embrace but a small proportion of our present numerous methods, and that even then our efforts will be more successful, and our results better.

In this, however, I do not mean to infer that any one specific system, or particular method, will ever be universally applicable to the varying conditions which confront us, nor that any distinctive line of procedure can invariably be followed, but I do believe that the status of our development at the present time indicates that we could do better work with fewer methods, if we would but recognize the possibilities of the present, and use good judgment in their application.

If there is one thing above another which is needed, however, to rescue this important specialty from the empiricism of the past, and to place it upon a sound, practical, and scientific basis, it is a better knowledge of its underlying mechanical and dynamic principles, and a better appreciation of the essential requirements incident to the work which we attempt to accomplish. Indeed, we can not hope to use good judgment until this is acquired.

As an evidence of the fact that good judgment does not always dominate the operator who essays to do crown and bridge work, let me briefly call your attention to a few of the many questions which still remain unsolved, and regarding which the profession is even now wofully divided.

Unsolved Problems in Bridge Work.

First, for example, should the pulps in teeth which are to support artificial crowns be devitalized as a procedure incident to the preparation of such teeth, or not? Second, should a crown be made with a band, or without? Third, should a band, when one is used, extend beneath the gum margin, or not? Fourth, should we destroy or mutilate the beautiful crown of a sound tooth for the purpose of obtaining support for a bridge, or not? Fifth, if this is not warrantable, should we use an open-face crown, a so-called "hood" or "groove" attachment, or some other method? And, sixth, should we use a "fixed" or a "removable" structure in the building of our bridges?

If dentistry is a scientific profession, and if it has progressed and developed with the marvelous rapidity with which it has been accredited, does it seem reasonable that such apparently simple and practical questions should remain unsolved?

PROSTHODONTIA

While it is quite beyond the pale of human reason to expect that any scientific body should agree on all things, or that all would be unanimous in their deductions and conclusions, yet it is not at all unreasonable to expect a solution of these more or less fundamental propositions. There must be a right way and a wrong way, and in these instances one or the other must be right or wrong, in a large proportion, or, at least, in a majority of cases, and that procedure which is best in a majority of cases is the proper procedure in a very large proportion.

Pulp Removal.

By way of analysis, the question of devitalizing the pulp of a tooth which is to be crowned is not one of personal equation, nor one which should be decided by the pet hobby of any man, but is simply a question of, first, whether it may be placed in a condition which will be most favorable to its comfort and longevity unless this is done. If such a tooth can be prepared from a mechanical aspect so as to admit of the accurate adjustment of an artificial crown, and if such preparation does not seem to endanger the vitality of the tooth, then to devitalize the pulp would perhaps be unnecessary, and consequently wrong, but unless this may be done and done in a thorough and conscientious manner —*which is seldom possible*—then devitalization becomes an absolute necessity, and must be resorted to whether we believe in it or not.

Bands.

The same may also be said of the question as to the advisability of making a crown with or without a band. In this instance the point is not so much whether we believe in a band or not, but is a question of the physiological and mechanical requirements of the crown which the root is to support. These combined demand a union between crown and root which will afford a minimum of irritation and a maximum of strength. If such composite requirements may be obtained to the best advantage without a band, then the use of one is unnecessary, and therefore objectionable; but if the presence of a band will afford a better adaptation of the crown to both the *base* and *periphery* of the root, thereby minimizing the possibilities of irritation, and carrying the joint to a more immune area, thus better protecting the mounting medium, which its proper adaptation has usually heretofore afforded, then such a type of construction is not only indicated, but demanded as a practice.

Sacrificing Natural Crowns.

The question as to whether we may or may not be warranted in sacrificing or mutilating the crown of a sound tooth for the purpose of obtaining support for missing teeth, should not be one of personal preference, but should and can only resolve itself into, first, whether

a fixed structure would be the best means of supplying the missing teeth or not; and, second, whether an artificial crown would afford the best and most permanent means of obtaining attachment to that tooth.

Until the present time an artificial crown has seemed to offer the best means of obtaining such attachment in the most artistic and permanent manner, for the reason that a better adaptation between it and the supporting tooth could be effected, than was so universally possible by any other means at our command. Previous to the successful application of inlay work this was true, because most, if not all, of our former methods were so difficult to adapt with any degree of accuracy that they could only be considered as being of a more or less temporary character, and since a remaining natural crown was thus saved—only to be subsequently lost—such a procedure was often warrantable, and would be so to-day under the same conditions.

Fixed and Removable Bridge Work.

The same general line of thought is also applicable to the question as to whether a fixed or a removable bridge should be used when missing teeth must be supplied. This, however, need no longer be considered a problem, but rather as a simple matter of judgment on the part of the operator, for there are distinctive indications and contraindications for the use of each.

If the position and stability of the teeth which remain, and which may be used to support the structure supplying the missing teeth, are favorable and adequate to the mechanical or dynamic requirements of a fixed structure, then such a type of construction is *indicated,* but in all cases where this may be at all doubtful, then a "removable" piece is *demanded.* Hence the success of the procedure will depend not so much upon the selection made from the vast array of methods at our command, but, on the contrary, must rest more or less entirely upon the appreciation of mechanics exercised by the operator. Indeed, my sympathy goes out to him in whom this faculty is not developed, and to his patients also when he essays to do dental bridge work.

Such an analysis of these so-called problems leads us to the conclusion that they are not questions of principles, but rather of judgment. Therefore, it behooves us to cultivate and develop this attribute to a higher degree if we would hope to aid in placing this specialty on a broader scientific and less empirical plane.

If this degree of judgment prevails, first in the application of correct principles, and, second, in the selection of methods of procedure, let me again prophesy that we will find ourselves discarding old methods, if indeed we have not already done so, and using even a lesser number of the new ones, and the practice of crown and bridge work will therefore become practically revolutionized.

Influence of the Casting Machine.

If the logic of such a statement is questioned let me say that it has been made possible largely by the advent of gold inlays and their assured usefulness, and particularly by the splendid achievements of Dr. W. H. Taggart, of Chicago, in the line of successfully casting gold and other metals, and for this reason to him more than to anyone else is due the credit for this revolution in our methods.

Accuracy of adaptation has always been and must always be the keystone of the arch in the successful application of crowns and bridges, and since this is now possible to a wonderful degree—to a degree never before achieved—and since it is applicable to crown and bridge work as well as to the filling of teeth, what must be the possibilities? Indeed, they seem unlimited. But even granting that such accuracy is to be obtained by the casting of metal, why does it follow that our methods are to be revolutionized by this process?

For answer let me say that a multitude of teeth which were formerly crowned for the purpose of effecting their individual restoration may now be successfully and permanently filled, and that the principal source of irritation and consequent discomfiture resulting from crown work in general will be thereby avoided.

Also, that many natural crowns of teeth which would otherwise be sacrificed for the purpose of obtaining anchorage for bridge work by the substitution of an artificial one, will be saved, and furthermore that the assured success of a well-adapted gold inlay, and the possibilities of obtaining such adaptation in all cases, will cause it ultimately to supersede other methods of obtaining anchorage or attachment to the crowns of remaining natural teeth.

In addition to this, it will enable us to adapt *accurately fitting metal bases* to the roots of teeth which are within the range of vision, and to use the various forms of replaceable porcelain crowns or teeth, instead of the ordinary pin facings, thus disposing of the question as to whether to use a band or not by removing the objections to one, and eliminating the element of inherent weakness caused by the presence of platinum pins in porcelain facings and giving us a combination of beauty and strength not to be obtained in a so-called "Richmond" or even in the more modern type of porcelain crown.

It will also enable us to successfully use replaceable porcelain teeth for dummies for bridge work in the posterior as well as in the anterior part of the mouth, thus improving upon former methods involving simple pin facings, usually of poor form or doubtful color, and a more or less

conspicuous display of gold incisal edges and occlusal surafces, and greatly diminishing the frequency of broken facings both in soldering and in mastication.

In this connection the heating of porcelain facings for the purpose of soldering, and their attachment to the metal structure by this means, has always been recognized as a more or less doubtful if not dangerous procedure, and as constituting an element of weakness in the finished piece. Both of these objectionable features, however, may be overcome or entirely eliminated by the strong assemblage of the metal parts only and the subsequent attachment of the porcelain to them by means of cementation, and as such an attachment is equally secure, and manifestly safer than the more rigid and unyielding one resulting from soldering, and as opportunity for replacement in the event of accident is always present and favorable, it must ultimately become recognized as the preferable procedure, and adopted as the general practice.

These possibilities will also enable us to construct bridges of any size with a minimum of solder and a maximum of strength, and to obtain all of the cosmetic advantages and none of the doubtful and objectionable features of porcelain bridge work.

Thus, also, in these enlightened and progressive days, when the leading minds of the profession are directed toward prophylaxis, will the *art* side of dentistry contribute to this splendid and growing cause by making possible the construction and application of better fitting and hence more "prophylactic" crowns and bridges.

Crown and Bridge Work of the Future.

Again, venturing a prophesy for the future, let me suggest what I think will be the composite of typical and ideal methods.

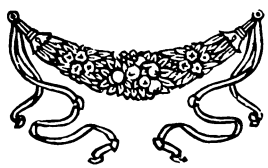
For single crowns the all porcelain, hollow, or "jacket" crown is undoubtedly one of the most practical and cosmetic means of restoring the anterior teeth, and while it will probably come into more general use than it is at present, still the high order of skill required, and the fact that such a type of construction is not universally applicable, will necessarily limit the field of its usefulness.

The use of replaceable porcelain teeth without platinum pins, to be subsequently attached by cement, for individual crowns and also for dummies, or substitutes for the natural teeth in bridge work, must be considered as the solution of the problem of discolored and fractured facings, for the reasons mentioned, and hence is undoubtedly destined to become the practice of the future as soon as we can prevail upon the manufacturers to supply our wants and needs in this direction.

With porcelain teeth suitable for this purpose—and we will get them some day—we will thus have two general types of construction for single crowns, types which will embrace a field more or less universal in application and general usefulness, for all teeth within the range of vision. Combine these with the ordinary gold shell crown made to fit and to occlude properly, and applied to teeth so removed from the range of vision as to eliminate any objections from a cosmetic view-point, and we find a limited number of types, with an almost unlimited range of application.

Having also one general type of dummy for bridge work which will be equally practical, esthetic and applicable in the construction of dental bridges, then we will need but to consider what shall be the type of attachment to the supporting teeth, and I am of the opinion that three general types will ultimately answer our purposes in a very large majority of cases. The replaceable porcelain crown with cast base for anterior roots, where the substitution of the entire crown is indicated; the gold telescope crown for posterior roots, where crowning is demanded, and the inlay where all or even a sufficient portion of the crown of the natural tooth remains, and these attachments are equally applicable to "removable" as well as to "fixed" structures.

Thus may the construction of crown and bridge work be revolutionized, and, therefore, since we have these splendid possibilities ahead of us, must its practice become less empirical and more systematic, practical, cosmetic, and successful.



Necessity of Retention of the Temporary Teeth with Special Reference to Their Root-canal Filling.

By Dr. Henry C. Ferris, Brooklyn, N. Y.

Read before the Second District Dental Society, March, 1907.

"If, unhappily, I dream,
And prove too weak for so divine a theme,
Let charity forgive me a mistake
Which zeal, not vanity, has chanced to make,
And spare the speaker for the subject's sake."

In the consideration of this subject we must first look to the laws of physical force which govern the growth of the human face. We find by comparative observations and measurements of skulls of increasing ages that the skull of the child grows forward and downward from the time of birth; and the greatest amount of development takes place in the dental region. By comparing the adult skull with that of a child we find if a line be drawn between the central points of the occipital condyles, it will divide the base of the skull into two portions, which in the child's skull are equal in length. The portion of the skull in front of a similar line in the adult skull is very much greater than that which lies behind, the proportion between the two parts being 5:3, against 3:3 in the child. (Froiep.) (Fig. 1.)

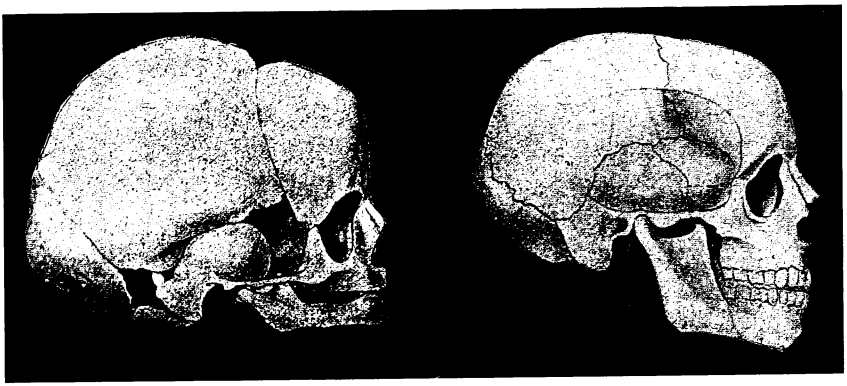


FIG. 1.

Scientifically, we must admit the hypothesis that in the germ cell there exists an architectural plan for the whole osseous development requiring twenty-one years, provided its nourishmnt is complete. Proceeding upon this premise, the dental arches, both deciduous and permanent, are to fill certain positions in the anatomy, just as the spinal vertebræ are to form a spinal column, and as the deciduous tooth is one of the first points of ossification, we can readily see why the deciduous teeth play such an important part in the development of their region. Each tooth develops in an independent manner in its own crypt in a growing structure, but arranged according to the divine plan (Fig. 2).

In its independent growth, its crown is formed first and its root grows toward the structure that has been previously ossified, compelling its

FIG. 2.

FIG. 3.

crown to travel in the direction of the least resistance (Fig. 3). Dr. Wright, of Boston, has recently advanced the theory that in proportion to the vascularity of the growing tooth pulp, and the maintenance of the blood pressure, so will the normal growth of the teeth progress. If the blood pressure be lowered from any constitutional cause, the teeth will be slow in their eruption. Nature in its plan causes the anterior teeth to develop first, and the eruption of the posterior teeth in the arch, receiving the greatest resistance in the densest structure distally, are thrust outward and forward; and during eruption produce a forward pressure on an already formed continuous arch (Fig. 4).

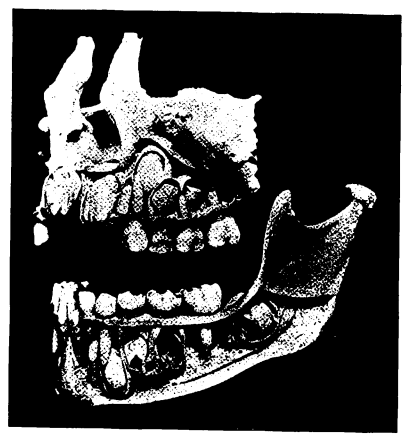


FIG. 4.

After the eruption of the deciduous set, if in normal occlusion, this mechanical force in the development ceases, and there is a period of child life between the ages of two to four years when another physical force must be brought into play, if the osseous structure about the roots of these teeth are to be stimulated to normal development; this force is mastication. The Indian child is given rawhide to chew as soon as it has teeth, and with few exceptions develops a normal occlusion; while our children, the product of education, live on prepared food that requires no chewing and normal occlusion, even in the deciduous set, is an exception. I wish here to introduce a condition that is everyday before us and which should be recognized as a symptom for malocclusion, even though the teeth are in good arch and regular (Figs. 5, 6 and 7).

FIG. 5. FIG. 6.

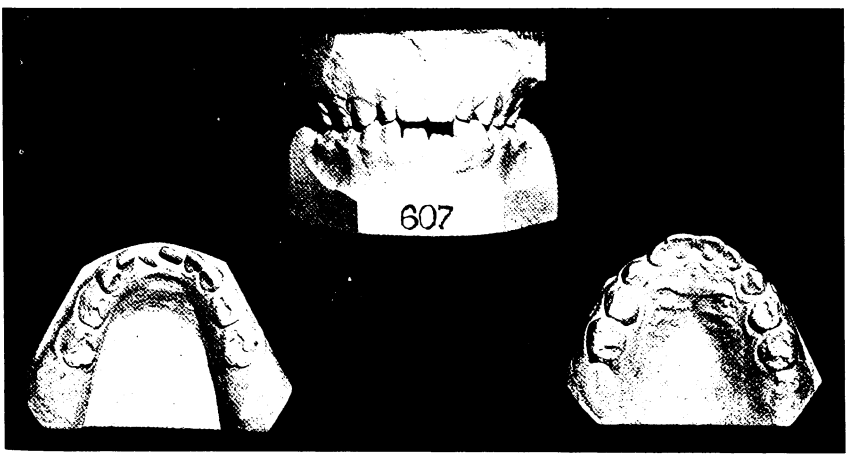


FIG. 7.

At this age the teeth should be separated by at least 3/100 of an inch; the permanent incisors, in the average case, are one-third again as wide as those of the deciduous set.

They are to fill a space in an arch of much larger dimensions, but there must be a beginning for the formation of this arch, which practically develops in two centers with the forward growth; that of the molar region and that of the incisor region, the pre-molars and finally the cuspids uniting these centers. The latter tooth erupts last and crowds its way to as-

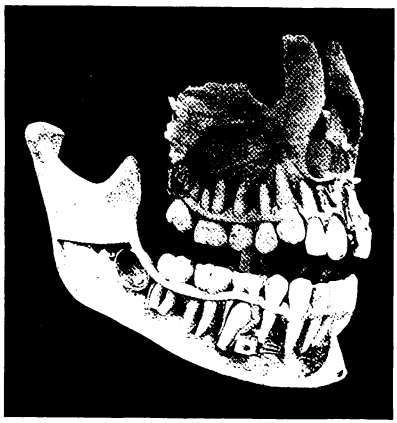


FIG. 8.

sume the position of a keystone (Fig. 8). Fig. 5 shows the lower arch, as the permanent teeth are erupting in torso-occlusion, and though we have an artistically balanced face at this age, the osseous development and the crowded condition of the teeth at twelve years of age would be appalling.

The exercise of any muscle in a growing physical structure develops its cell tissue, and if this muscle be developed, the necessary strain brought to bear upon the osseous attachments will necessarily develop that bone. Otherwise it would not be sustained. The force of mastication upon the deciduous set, therefore, causes the osseous tissue that supports them to grow. If this exercise is normally produced the growth of the bones will be manifest by the separation of the teeth in the arch (Fig. 9).

At the sixth year of age comes another mechanical force, in the eruption of the first molar. Its forward and outward thrust then increases the pressure on the arch in that direction (Fig. 10). If by any accident the continuity of the arch be lost by the extraction of one or more deciduous teeth or the malocclusion of the first set, this tooth will be thrust

forward prematurely, partly because of the lack of mesial resistance and by the abnormal locking of the inclined planes of its cusps, to the position that it would otherwise ultimately attain, and the development of the anterior part of the face be retarded by the loss of this pressure. Figs. 11, 12 and 13, a case from the practice of Dr. J. Lowe Young, will prove this statement. The history of this case was, that the deciduous teeth were in normal occlusion, and now we have deformity of the permanent dentition as a result of this mutilation.

Assuming that the continuity of the deciduous set be normal and un-

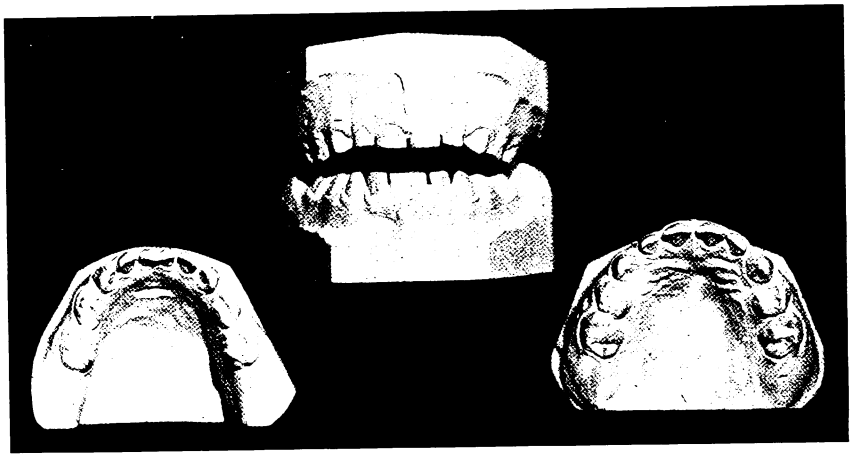


FIG. 9.

broken, this king of teeth exerts its pressure upon the forward part of the arch; and the osseous development progressing normally, without interference by habits or other pathological conditions, the anterior teeth will develop into normal occlusion, and we will have nature's architectural plan completed, which will give the best beauty and most perfect artistic balance of the face that this type can attain.

Dr. Edward H. Angle, after fifteen years' experience, presents this as a scientific truth, and our observations agree; therefore, we must do all in our power to maintain the continuity of the deciduous set of teeth, by contouring our fillings, which should be of materials which do not alter in their shape, and by the treatment of abscessed conditions which too frequently result in loss by extraction. If the condition demands extraction, our duty then is to maintain the continuity of the arch with a mechanical fixture to assist nature in its development. Abscesses are doubtless the greatest cause for the loss of the deciduous molars, and therefore the one most worthy of our consideration.

Root-filling for Deciduous Teeth.

There are a number of methods of varying values recommended for treatment of this condition, none of which, however, fill the root canals with a material which is absorbed with the root, and any other offers a source of irritation for a recurrence of the pathological condition.

To fill the root canals which the osteoclasts are about to absorb to make room for the growing permanent tooth, we must have a material that will be absorbed with it, and will adhere to moist surfaces, as we can not

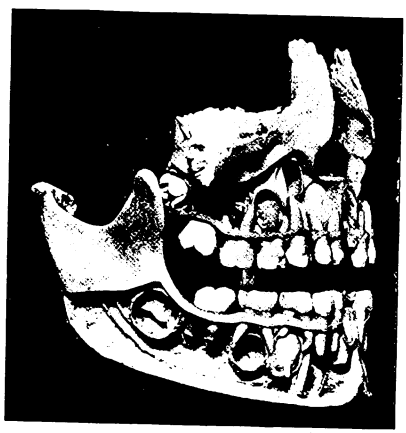


FIG. 10.

thoroughly dry them; a product which is non-irritating and, if non-medicinal, a conveyor of drugs. For this purpose your essayist wishes to suggest a treatment of formalin and trikresol, equal parts, as recommended by Dr. J. P. Buckley, for sterilization, which is to be removed in forty-eight hours. After the removal of carious matter the root canals are filled with this formula:

℞ Isinglass ..... dr. i
Tannic acid.....gr. iss
Trikresol .....m. iv
Aqua dist. .....dr. i, gr. xxx

This when heated to a temperature of 100° in an ordinary glue-pot or water bath (Fig. 14), becomes syrupy and can be readily introduced into the root canals with a piece of sterile catgut. If the canal be large

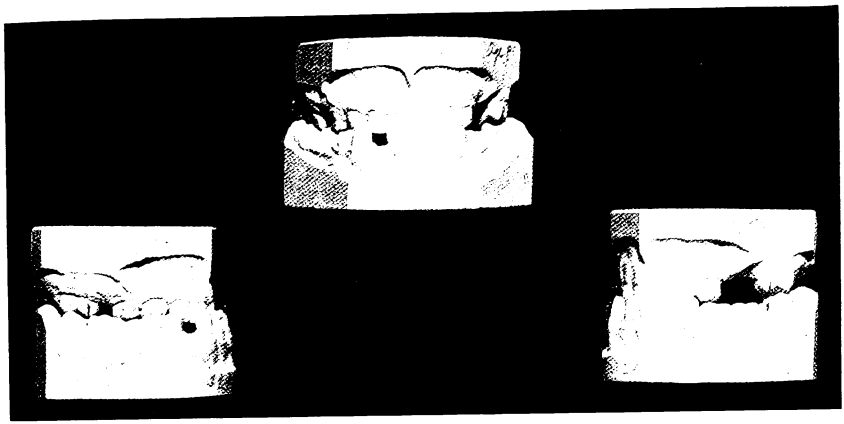


FIG. 11.

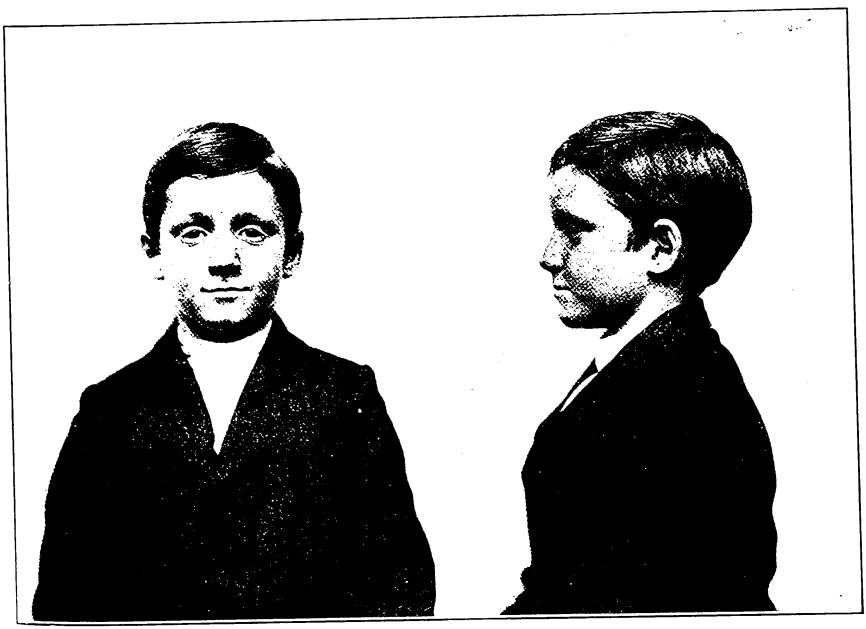


FIG. 12.

FIG. 13.

the catgut may be left in the canal. A ball of stiff phosphate of zinc is then pressed into the pulp chamber forcing the mixture through the canal and sinus. The cavity is then filled and contoured with silver amalgam.

The isinglass acts as a plug and conveyor; the trikresol is a clear white watery liquid, having three times the disinfecting value of carbolic acid, while it is three times less poisonous, and less caustic; and is

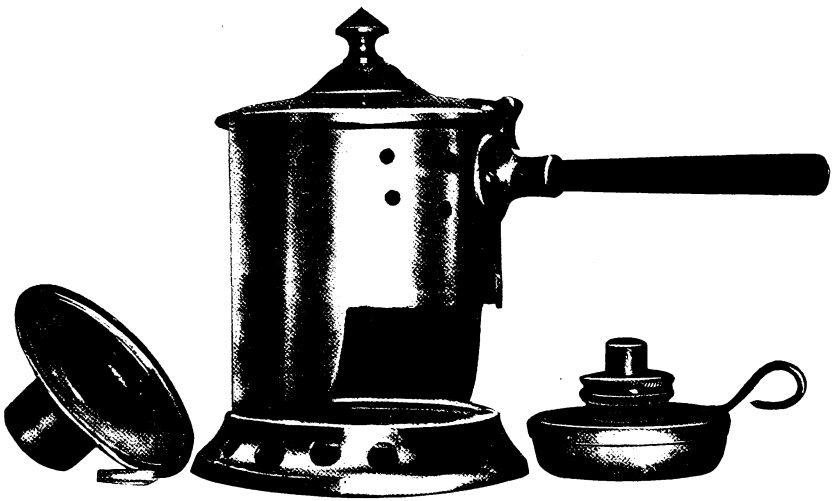
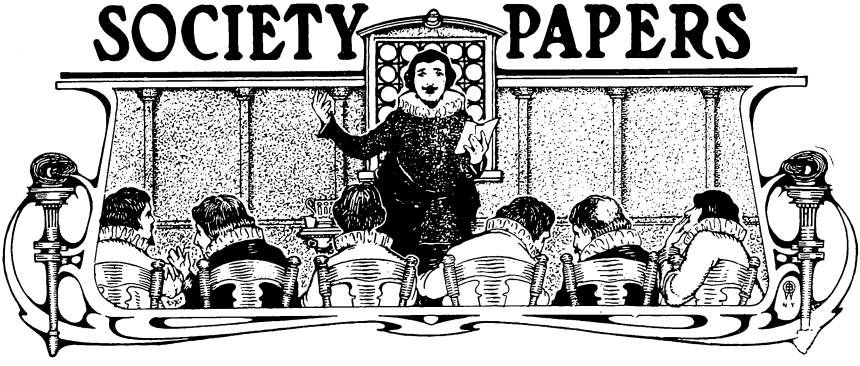


FIG. 14.

composed of ortho-cresol 35 per cent, metro-cresol 40 per cent., and para-cresol 25 per cent. In bacteriological experiments undertaken by Major Walter Reed, Curator of the Army Medical Museum in Washington, he found that a one per cent. solution of it accomplished as much as a four or five per cent. solution of carbolic acid. The tannic acid renders the mass less soluble, but the mixture will absorb under the physiological process of development. This treatment, while successful in the few cases where your essayist has been able to use it, remains to be tested by many to be declared a success, and it would be interesting to hear reports of others in the future upon the practice.

If by this method or any other we are able to save these important members of the deciduous set and maintain the continuity of the arches, we render humanity a service and fulfill our duty.

SOCIETY PAPERS



Cast Gold Inlays.

A Clinical Demonstration and Lecture.

By Wm. H. Taggart, D.D.S., Chicago, Ill.

Delivered before the New Jersey State Dental Society, Asbury Park, July, 1907

A number of years ago, after we had worked at inlays by the matrix process and found that it was a means of saving teeth—and saving bad teeth—I found in my own practice, and by watching other men, that the only improvement or advancement that was being made in inlay work was in the ability to handle the metal, mere skill in manipulation, and I felt that for any further improvements in inlay work we would have to go in an entirely different direction, and the idea came to me that casting would be the process.

I knew metals would shrink, but it never occurred to me there could be such a vast shrinkage in such a small quantity of metal. My first efforts were exceedingly crude, and I then thought of casting under pressure. This idea was not entirely new, but the methods in vogue were only applicable to large work, being too slow a process for the small portions of metal which we use. I then conceived the idea of doing it with compressed air. I made flasks which could be opened as in a vulcanizing case, but which had to be made air tight, otherwise the gold would squeeze out between the joints of the flask.

Inlay Model Made of Wax.

It then occurred to me to make a wax inlay, having the wax come in actual contact with the surface that was to be fitted with the gold, with no intervening matrix. After I had succeeded in making my first inlay by this insertion process the next one I made was a practical case, and from that time on I have not made an inlay in any

other way. My first apparatus was so crude as to require three or four different movements, and all this meant a loss of time, and perhaps just at the psycological moment. When the gold is in the proper condition you do not want to waste one moment of time in getting it to its place, and I think the process I will show you now will demonstrate that and show the benefit of taking advantage of every moment of time.

In the first place the wax inlay is made of a special wax which has been filtered a number of times in order to free it from any foreign substance, because the wax is inclosed entirely in the investing material and that material heated up to a very high temperature in order to burn out the wax, and if there were any foreign substances contained they would naturally cling to the side of the mould and to the extent of the size of the foreign body would interfere with the fit.

The cavity is prepared without any undercuts, as you would for any other inlay work. Without making any pretense to get the cavity dry (in fact the moisture is a help) a wad of wax sufficiently large to more than fill the cavity is pushed into all the inequalities of the cavity. In inlays from a cast I use vaselene to prevent sticking, but in the mouth the moisture of the saliva is all that is necessary. After the wax is inserted in the cavity, the patient is instructed to bite into the wax, and then I tell the patient to chew, as though he were chewing gum, which results in getting proper occlusion and obviates the possibility that some of the high cusps may be too high. At that period of the work I unseat it for the reason that later on, when it is in the form of an inlay, I do not want to use any force to lift it out. By getting the proper temperature of the wax in the mouth, by a stream of cold water, you can do a lot of carving in the mouth, but I prefer at this stage to lift it out of the cavity and carry it to the hydrant and holding it in the fingers let cold water run on it; at that temperature it gets so hard that you can carve it without marring the edges materially, although if you do so you always have an opportunity of putting it back into the cavity. After it is carved to the proper contour I put it back into the cavity.

You now have the occlusal surface correct, because it has been carved by these land marks—the marks of the opposing cuspids. The fact that the wax will slip in tightly will give you the proper approximal contour. If the tooth is in a normal position you do not have to do any wedging, because you want the close contact of the wax inlay against the opposing tooth; that indicates the proper contour.

Next I take a wad of cotton in tweezers and polish the inlay until it looks as if it had been passed through the flame, although this does not wear down the high points nor fill up the depressions, and the polish and finish you put on the inlay saves work after the casting of the gold. Then

I take a piece of tape, as though I were going to polish a gold filling, and pass it down in between, not pressing hard, but just rubbing lightly, and this burnishes the wax to the very finest feather edge that your cavity will permit of, and no matter how fine that feather edge may be in the wax it will be reproduced in the gold. Any excess or overhanging margins left in the inlay would naturally be in the gold, and it is easier to take it off in the wax than in the gold.

There is a little wire that I call a sprue wire, for it forms the hole through which the gold is eventually forced. I have my Bunsen burner

FIG. 1.

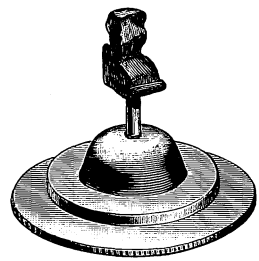


FIG. 2.

here, *and I hold the sprue wire* (indicating) *in my fingers, so as not to get it too hot.* The wax inlay is now attached to the end of this sprue wire (Fig. 1); that is then put into the cap of the flask in the central hole (Fig. 2); the cap of the flask has a bulge on it, and after the investment hardens you take the cap off and the reverse will have a depression of the same shape as the little bulge on the cap of the flask. That forms the crucible where the gold is to be melted, and the sprue wire forms the hole down into the wax inlay, the wax inlay being inside of this solid investing material.

Fig. 3 shows flask, cap down, filled with investment. Fig. 4 shows flask reversed, cap removed, and crucible; dotted lines indicate passage down to wax inlay.

At that stage we put it over a flame, which softens the wax and melts it. Then we are ready to cast.

(At this point Dr. Taggart produced a number of specimens, which he explained, and which were distributed among the audience for examination. Dr. Taggart stated that he should be pleased to answer any questions that might be asked.)

Casting a Hollow Inlay.

The question is asked whether I can make a hollow inlay by this process. Yes. After the wax has been put into the cavity and unseated, by chilling it, you can hold it in your hand and with a sharp lancet can cut out of the internal part of the wax as much undercutting as you may desire; you can hollow it out and then put it back in the cavity, and as you do not have to press down on it hard after that, you do not crush the internal pocket. Then you can carve your inlay, and when it is cast it will have the same pocket in it.

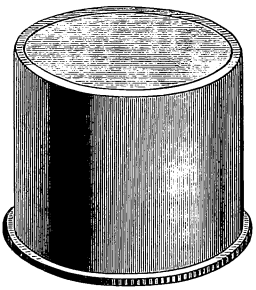


FIG. 3.

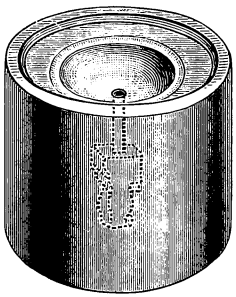


FIG. 4.

These inlays will stick in cavities that no other inlays will, as they fit so tight, and there need not be so many retaining points as in other work of this kind.

Working from Models of Cavities.

The question has been asked whether I always make the wax inlay in the mouth. I always do if I can; once in a while you will find a case where you can take an impression of the cavity more quickly, and then at your convenience or leisure make a model of it and work from the model. If you get a correct model you will get just as good a fit as you can from the cavity itself. The disadvantage is that eventually it takes more time, because after you become a little bit expert in this line of work, you can make a wax inlay as quickly as you can take the impression, and in that way avoid model making, articulating the model, and so on. Not only that, but you can make almost an ideal edge which you might not get in such a perfect way in a model of any kind.

Taking Impressions of Cavities.

Someone asks how I take an impression of the cavity for making a model. That goes into another line of work, and I will hardly have time to enlarge upon it. However, I take an impression in modeling compound, by using a piece of metal, bent to fit the approximal and occlusal surfaces, so as to get pressure against the cavity

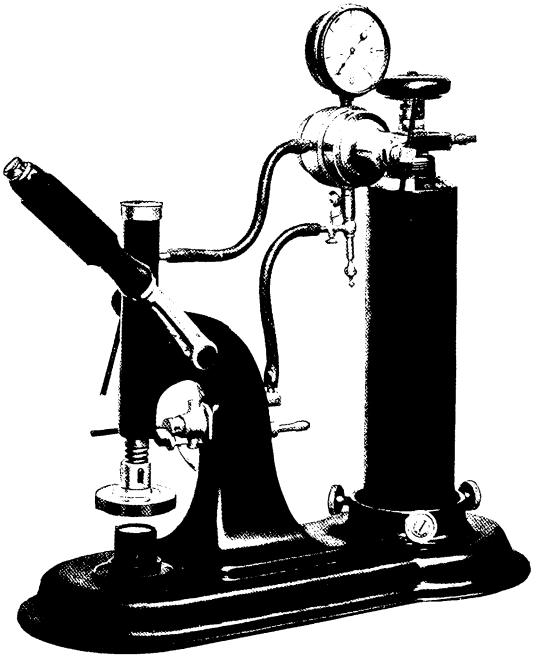


FIG. 5.

walls with the investment material; then I lift that out of the cavity and chill it and trim it until I get a very narrow, overhanging margin, then I put it back into the cavity and press it down enough to reseat it, and chill it thoroughly, and thus procure a good impression of the cavity. In a model from that we get an accurate fit for the inlay.

The technique I am giving you has been worked out with much care and labor, and if you will follow these instructions you will not go very far astray. After you have learned the technique possibly your own way of manipulating the wax or investing material may give better results; I would rather you followed these instructions at first and after-

ward if you improve upon them I wish you would let me know, for it would be a great help to me, as a man is apt to get a little bit set in his ways in a matter of this kind.

Investing the Wax Inlay.

Now I will show you the beginning of the investing process. Investing material and plaster of Paris have a great deal of contained air in them, and that contained air is not necessarily fatal but is very undesirable, and the efforts to jar out the resulting bubble only

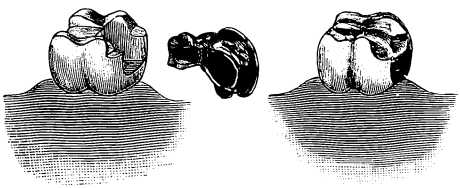


FIG. 6.

seems to bring up another bubble, and that would cling to the wax inlay. I use a tiny spatula for carrying the investment, and putting a little of the investing material on the wax *where you do not want it, and carefully pushing it ahead to where you do want it,* so as to prevent any air getting in ahead of you, bubbles will not be formed. When the wax is entirely surrounded I commence at the base to build up, and from this time on I

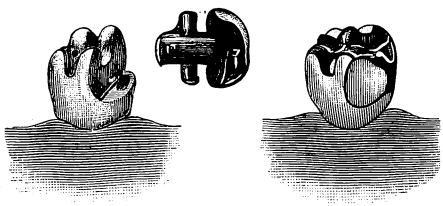


FIG. 7.

never like to jar it. (Dr. Taggart proceeded to illustrate his method of filling the flask with the investing material.)

The best time to invest wax inlay is the moment you take it out of the patient's mouth. If that is not done, and it is allowed to remain in a bottle or on a shelf, on a hot day like this its own weight might distort it a little. Always write the patient's name on the flask so as to distinguish one from another.

I generally allow about fifteen or twenty minutes for the investing material to get hard. The wax is burned out by putting it over a Bunsen flame and allowing it to remain there until the gases formed by the melting wax will light at the little sprue hole; then it is burned up in that way.

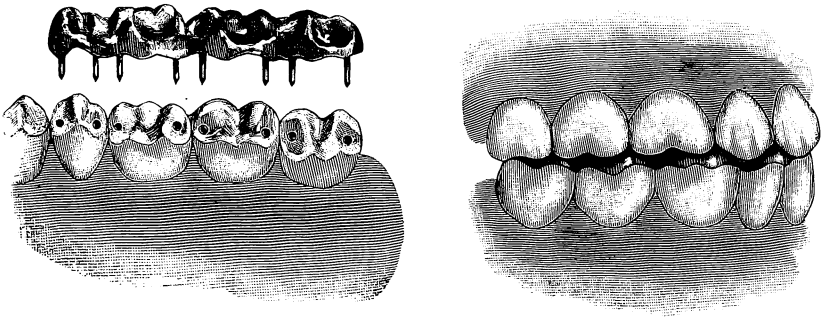
The question has been asked whether this investing material is ordinary plaster of Paris. It is not; plaster of Paris would disintegrate, it would not withstand the heat; it must be loaded up with other material. (Dr. Taggart here proceeded to illustrate the use of the machine, Fig. 5.) The forward part of the machine, where the handle is seen, is where the melting of the gold and the casting is done. At the other side is seen an ordinary cylinder of nitrous-oxid, just as it is procured from the supply houses. This supplies the blowpipe, producing a nitrous-oxid flame, and also furnishes the pressure for casting. The gauge regulates the flow of nitrous-oxid, so that the pressure may be made proportionate to the mass of metal to be cast, fifteen pounds pressure sufficing for ordinary inlays. The invested inlay having been heated up until all the wax shall have been certainly melted, the flask is placed in the casting device, crucible side uppermost. A mass of gold is then placed in the crucible. It is inadvisable to use scraps, as a small particle might become melted before the rest and run down into the mould; the gold to be utilized, therefore, should be previously melted into a single lump, and should be free of dross of all kinds. The nitrous-oxid blowpipe is then lighted and turned so that it plays down directly upon the mass of gold. It will first melt and a moment later begin to "boil." At this exact moment the level is sharply thrown downward. Instantly the blowpipe is automatically switched aside, and pressure of the gas is turned upon the molten mass, thus casting it.

The question has been asked, why does this gold not shrink? The molecules of gold when melted and allowed to take their own shape and position in the cooling mass will fall away from the edges, and that causes a shrinkage. Under these conditions I force that gold in its thinest condition, and I say to the molecules—with the force of fifteen or twenty pounds behind them: "You stay where I put you"—and they do, and there is no shrinkage.

Here (exhibiting inlay) is the completed inlay. It is very seldom that in a clinic one meets with complete success, but this time we have, for there is not a blemish upon it. (Loud applause.)

On motion a unanimous vote of thanks was extended to Dr. Taggart.

On motion adjourned until 8 o'clock P. M.



A B

FIG. 9.

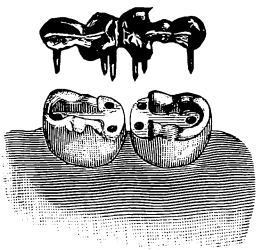


FIG. 8.

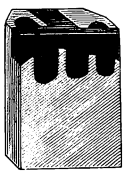


FIG. 10.

FIG. 11.

FIG. 12.

FIG. 13.

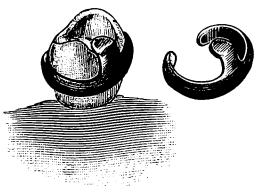


FIG. 14.

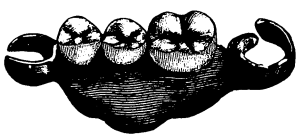


FIG. 15.

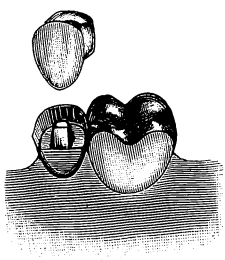


FIG. 16.

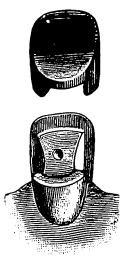


FIG. 17.

Explanation of Illustrations.

Fig. 1 shows a wax model of an inlay, attached to the sprue wire. After shaping the cavity the wax is pressed into it, carved to shape and gently removed. It is then held in the fingers of the left hand, and the sprue wire in the right is heated in a flame until it can barely be held. The heated end is then gently forced into the wax model of the inlay and appears as seen in the figure.

Fig. 2 shows the sprue wire carrying the model, seated in its socket in the cap of the flask.

Fig. 3 shows the flask ring in place and filled with investment. The investing material is carefully placed about the wax model first, as described by Dr. Taggart, after which the flask ring is slipped over it and adjusted to the cap, whereupon the investment is completed by filling the ring flush.

Fig. 4 shows the cap removed and the flask ring turned over, disclosing the crucible formed in the investment by the cap, while the dotted lines indicate the position of the sprue and mould of the inlay.

Fig. 5 is the Taggart casting machine.

Fig. 6 shows a Taggart inlay in position, the inlay itself, and the cavity preparation. Such an inlay may be made solid or it may be made hollow, as shown in the figure in which the under side of the inlay is seen.

Fig. 7 shows a combination gold and porcelain inlay. In the case illustrated caries had destroyed the mesio-buccal corner of an upper first molar. The cavity was prepared so that the inlay would be firmly locked in the morsal surface. The mesio-buccal face of the wax was cut away almost to the margins, and a box-shaped cavity formed in the wax. This was cast, and returned to the cavity when it was thoroughly adapted and polished. The gold was then stoned away to an almost invisible joint at the buccal margin, and the porcelain was baked directly into the inlay. It is, therefore, not a porcelain inlay set with cement, but is baked into the gold inlay, and firmly held by undercuts. When set very little gold shows.

Fig. 8 is a double inlay for splinting together teeth loosened by pyorrhea. Such a continuous inlay may be made with or without pins, as may be deemed essential to the exigencies of the case. Where pins are used, the holes are drilled with the right angle engine handpiece, and are made as nearly parallel as possible. It is not essential that the pins should have heads, as the gold cast about them will be firmly attached to the platinum pins, but each pin should first have a bit of wax fused to its topmost end, so that the wax when pressed over them in forming the inlay model, will more readily engage them. The wax model will come

away, withdrawing the pins, and all are invested together, the investment holding the pins when the wax is melted from the mould.

Fig. 9 is a specimen made by Dr. Taggart to show an extreme possibility. Two pins were placed in the tops of each of four teeth and the wax forced over them all. The teeth were then brought into apposition, so that the wax received the imprint of the opposing cusps. Fig. 9 A shows the gold inlay made to cover four teeth and carrying eight pins, and Fig. 9 B shows the same in place and the absoluteness of the fit, both to the teeth which receive the "inlay" and to the occlusion. In such manner a "bite" might be opened, and more or less loose teeth splinted together at the same time.

Fig. 10 was made by Dr. Taggart to show an extreme cavity formation. He prepared the curiously complex cavity in the end of a piece of ivory, made an inlay, cemented it to place and then cut it in half. The figure shows one section.

Fig. 11 is a similar section through a root and porcelain crown united by a Taggart casting.

Fig. 12 is a remarkable evidence of the accuracy with which the machine casts. Dr. Taggart tied a piece of wax into a double knot as seen, and cast it in gold. The figure is actual size.

Fig. 13 is another remarkable casting made by Dr. Taggart from a wax model carved by himself, and this figure also is actual size. The exact identity of the animal is known only to Dr. Taggart, but savants believe that he has fashioned it from descriptions of the prehistoric "*doghorsehippopotamus.*"

Fig. 14 shows a Bonwill clasp cast by Dr. Taggart of "clasp" gold. Despite contrary expectations it retains its spring quality.

Fig. 15 is a partial piece carrying three teeth and two clasps, also cast in clasp gold. The teeth are attached subsequently with cement.

Fig. 16 shows an inlay carrying an extension for the reception of a pinless tooth, which is cemented to place. It is prophesied that the crown and bridge work of the future will largely be composed of cast bases, carrying pinless teeth cemented to place, thus making repairs easier. No attempt should ever be made to cast directly against pin facings, because even though it may often be done successfully, teeth so attached to backings will be as liable to fracture as teeth backed and soldered in the old-fashioned way, and the one real grievance that patients have had against dentists in the past has been the destructibility of fixed bridge pieces, and the expensiveness of repairs.

Fig. 17 shows a cast backing for the lingual surface of a natural tooth, which will often serve as an attachment for one end of a small bridge piece.

SOCIETY PAPERS

Some Random Society Experiences.

By Charles A. Meeker, D.D.S.

Read before the Second District Dental Society, Brooklyn, October 14, 1907.

In the present day, with dental society meetings occurring nine months in the year, it is extremely difficult to present a new subject for discussion.

I have no new theory, no new truths to present to you this evening, and therefore crave your indulgence at the outset and ask you to forgive my apparent lack of modesty in the use of the personal pronoun "I."

It is my purpose this evening to present to you my society experiences from the time of my entering official life in connection with State society work in my own State in the year 1875. But, first of all, I desire to pay a debt of gratitude to Dr. William H. Atkinson, of whom it was well said, "He was at least twenty years ahead of his time," and who did more, perhaps, than anyone else by inculcating in the minds of the young men of his period (myself included) the desire to become better dentists. He placed the profession on a higher plane before the general public by his fees (always high), which he regarded as commensurate with his professional skill.

He courted a legal contest so as to bring himself and the profession into the limelight, and when the case came before the jury and the public, gracefully arbitrated the amount. But he accomplished his purpose by forcing before the public the fact that dentistry is a scientific profession, and no longer a side issue to the barber, as was cutting and leeching.

During my first year in office, in 1875, at Atlantic City, Dr. Atkinson was present, and he was then nearly in the zenith of his popularity. I was but just one degree removed from the "kid" class, and while I may have been perhaps a good mechanic, I had the impression that I knew it all, and under this impression prepared and read a paper at the meeting. During the discussion Dr. Atkinson slashed it up and down and across, and swatted it most unmercifully, leaving but a wilted subject when he got through with it. In one respect Dr. Atkinson differed very much from many of the older members of the profession of that day, in his attitude toward a young man who had the courage to read a paper. After the close of the session he sought me out, and putting his arm around me affectionately said that he had only done it for my good and advised me before reading another paper in public to master my subject

thoroughly, to be sure I was right in what I said. This was Dr. Atkinson's method, to stimulate the ambition of the young men of his time with whom he came in contact, and he was invariably their fast and firm friend afterward.

During my first year as secretary nine essayists were presented at the meeting, Norman W. Kingsley being the star and Atkinson the man who combatted with every one of the speakers. We had one clinic and no exhibits. The next year we had seven papers, Dr. Atkinson presenting one on "Tumors and Abscesses," and no clinics or exhibits. In 1878 we again had a paper by Atkinson and another one by Bonwill and no exhibits and no clinics. In the following year, 1879, when the present essayist had the honor of holding the office of president, we had plenty of papers, but no exhibits or clinics. Besides this there were plenty of personal arguments in the meetings, and I believe that was simply because we had too many papers and no exhibits or clinics.

At that time the older and better known members of the old American Dental Association considered it beneath the dignity of the profession to give clinics or to have exhibits, and both were frowned upon. I thought that if I could obtain the co-operation of the more prominent members, we would have both as inducements for the men to come to the meeting, and in 1883 we had in our program five different clinics, Dr. C. W. F. Boedecker, of New York, being the star with a lantern exhibition on "The Anatomy of Tooth Structure." There were not quite enough clinics to round out nicely the day's program, so I faked a "Dr. Gardener, of Marseilles, France"; it is needless to say that he did not make his appearance with his new "cast metal base," though he was asked for a number of times. At this meeting quite a number of the profession came down with exhibits, and there was an increased attendance, and the meeting went off finely. The next year Atkinson, Bonwill, and Carl Heitzman read papers, and there were a number of exhibits and clinics, including my old friend Gardener, of France. By this time it was pretty conclusively proven, if our society meetings were to attract a large number of the profession, we must offer them a post-graduate course in dentistry through clinics and exhibits as well as instruction from papers read by eminent members of our own and other societies. With this end in view, at the following meeting we had not only plenty of papers, a number of exhibits and many interesting clinics, but also a reception at Asbury Park, with the Governor of the State in attendance. In 1886 we made strong efforts to secure an advance in the character of the meeting, and this year showed the beginning of the enviable reputation which we now hold as a dental society. We gave a big dinner at the Coleman House, Asbury Park, to Dr. William Herbst, of Germany,

then on a visit to this country, and he gave a clinic illustrating his rotary method of filling teeth. Besides this we had Atkinson, Frank Abbott, O. E. Hill, Northrop, W. W. Walker, Darby, Dwinelle, Finley, Hunt, Winder, Kingsley, Carr, Boedecker, Bond Littig, James Truman, Bonwill, and other well-known men. This meeting ended in a blaze of glory and helped the reputation of the society, but if I should continue to tell you of the meetings from year to year since that time it would be but a history of our society.

The real point is, What did out members and friends deduce from these society experiences? and it seems to me the question arising for discussion is whether we are right or wrong in our methods of managing our society. The men who helped by their enthusiasm, their knowledge, and their work to make our society what it is to-day were Drs. Atkinson, W. W. Walker, Northrop, Frank Abbott, George Evans, O. E. Hill, Carl Heitzman, C. W. F. Boedecker, Bonwill, Norman W. Kingsley, C. N. Pierce, Rodrigues Ottolengui, James G. Palmer, and others I can not recall, many of whom have now passed beyond. Among our own members who worked hard for our success and have now passed to the great majority were Drs. Fred A. Levy, George C. Brown, J. W. Scarsborough, Jeremiah A. Hayhurst, J. W. Cosad, and others whom I can not at this moment name. Of the elder members now living and to whom belongs in a great measure the credit for having made our society what it is to-day, I may mention Drs. C. S. Stockton, B. F. Luckey, R. M. Sanger, Oscar Adelburg, George E. Adams, F. C. Barlow, H. A. Hull, Harvey Iredell, Alphonso Irwin, C. W. Holbrook, J. C. Clark, William P. Richards; and there are a host of younger men who are still working for the good of the society, but whom it would take me too long to mention individually and whose names will doubtless be famous in the years to come.

Successful Method of Society-Management.

My experience is that to run a dental society successfully, you must first recognize that man by nature is gregarious; the social element is strong within him; give him a paper to discuss which pertains to his every-day work, with dentistry, what he is conversant with; then in the discussion try to draw out the views of the younger men; have plenty of clinics, which in reality form a post-graduate course showing by object lessons how one particular man performs certain operations.

Then show by exhibits the whole range of new appliances by which the dentist may do his every-day work better or easier. The average dentist visits but one dental depot to see new things only occasionally, and then to see only such things as may be found in that particular depot.

An exhibit of all the new things from all over the country shows him the efforts of hundreds of men who are engaged in thinking out and perfecting new ideas, thus taking him out of the rut in which he may be traveling.

Encouragement to Young Men.

Then, in every society it should be made known that the youngest member, if he is willing to put his shoulder to the wheel, will in time receive as his reward the highest office in the gift of the society as a positive certainty. It does not matter if he is not a parliamentarian; his experience from the very beginning, when serving on some minor committee, until he reaches the highest office, will broaden his whole makeup; nor will you have any occasion to be ashamed of him, provided he has always been earnest and energetic in his endeavors to work for the success of the society.

I have watched and seen many a young man reach the goal of the presidency, who, despite his modest mein, I felt sure was made of the right material. Do not allow politics or the genius or brilliancy of one member to keep another down who is a hard worker.

The Value of Dining Well.

Cultivate the gastronomical side of the nature of the members (this is my own secret), for the average dentist, who works eight or ten hours each day, has many trials to contend with, many a patient to work for who tries his nerves, and oft times when he reaches a dental meeting his condition is such physically that he is not good company, but a good dinner sets the whole nervous system working, and the hypnotism of suggestion, gradually acts on the entire assemblage and changes the whole trend of his thought and feeling. He sees that his brother dentists are pretty good men after all, and the world looks much more rosy than it did an hour before.

Dickens has been severely criticized because he makes his characters eat so often, but his critics were usually those who lived lives of more or less seclusion, and lacked social characteristics; to the real man and woman of the work-day world his tales of the supper table produce a glow of satisfaction and make them more considerate of those with whom they come in contact. This same influence exerts itself upon the members of the dental society after a good dinner with congenial company. They really have new aims and higher ambitions, and when they discuss a paper, higher thoughts and higher aspirations are apt to be brought out, and thus there is created a brotherhood in the profession and a higher estimation of the society itself. I can myself refer many bright spots in my professional career to the dinners of the old Brooklyn Dental Society, to the meetings and collations of this society in the offices of the

members and in the "Old Argyle Rooms"—indeed the mere fact of eating, even bread and cheese with beer, seems to change a man's feeling and give him a more kindly disposition toward his fellow men. We are not all angels in temperament, but we can all try, when differences arise and we think a brother dentist has wronged us, to stifle our pride and seek to make up our differences. I do not say we can always do it, but we can at least have the disposition to try. I have often succeeded in doing this myself, and shall earnestly seek to school myself to do so more often as I grow older.

Use of Public Press Recommended.

And now I come to my last formula for making a society strong. I am fully cognizant that many here will honestly differ with me, but I am in earnest, for thirty-two years' experience has shown me the result in our own State and local societies. I know it has accomplished great good in two measures particularly. It is to take the public in your confidence, through the public press. I am a firm believer that the press, the daily disseminator of occurrences from day to day, is a powerful agent for the public good. There are four reasons why this will aid your society.

First. You show to the general reading public what you are doing to educate yourself and your fellow members; that you are banded together for the general good, so as to secure the benefit of the latest methods. If there is a new gold brick scheme, the public will know of it, and they will no longer call you a "tooth carpenter," though in some places they hear so little of the operations of the profession and its doings that they might sometimes be justified in using that term.

Second. Truth is sometimes apt to hurt, and when you see in cold type any of your deficiencies you will try to correct them, so that you need not be told of them the second time.

Third. It shows to the reading public the difference between fakirs and quacks, and yourselves. Your patients will read the new discoveries in your profession, and they will begin to think that the man who occupied columns of the daily papers at the expenditure of thousands of dollars every week, exploiting his methods of putting new teeth in an edentulous jaw and making loose ones tight, is telling fairy tales, and thus—as from the exposure of the newest swindle in the papers—the general public becomes wise.

Fourth. It will help the ethical dentist because the reading public will discriminate between the members of the society and the unethical man who advertises to do impossible things, and show a strong distinction between the members of the society who are working to disseminate knowledge for the general good and the fakir who is only after their

money. In time the effect of this information will become so strong that the patient will select the society member to do his work, or wonder why his dentist, if an advertiser, is not a member of the society.

Someone with a love for statistics has said that every dentist must have one thousand patients to make a living. If we have a society of one hundred members, every paper that prints your proceedings will be read by and will educate at least one hundred thousand people, and it might be that your own name would be mentioned and that one of your one thousand patients would be interested to see the name of his own dentist.

The income of the dentist is derived mostly from men who constitute the work-a-day world, and life in the cities is a daily rush. The education of these men is mainly derived from the daily press. They have but little time for literature or fiction, therefore I advocate educating the men who pay your bills and letting them know what you are doing for them and their families.

State Society Meeting Successful.

Now, to prove my contention that the methods I have advocated have proven successful, I will mention the fact that New Jersey is but a small State, and but one thousand and sixteen men have been licensed by the Board since the passage of the law. We have no brilliant nor scientific men who have made their names famous by delving in science or discovering new methods or truths in the anatomy or physiology of the oral regions, just plain, every-day dentists. Yet our State society meetings are famous.

In arranging for our annual meetings, we pay particular attention to our clinics. Last July we had sixty clinicians on our list, fifty-four of whom attended. These were men from all parts of the country, and they performed work in nearly the whole range of operations that the every-day dentist is called upon to do, and showed many new and unique methods. Our essays were few, but on interesting subjects, and by men well known throughout the entire country. Our exhibits were from the four corners of the United States, and showed everything worth showing or worthy of a place in modern dentistry. We try to treat our exhibitors the best we know how, meet them half way in courtesy and try to do everything in our power to make them our friends and co-workers, and without the slightest deviation from the truth I can honestly say that during my experience (excepting two instances) we have received nothing but praise and commendation for our treatment toward them. It has been our aim to make our program as original and artistic as our finances could afford, and the old saying that "Imitation is the sincerest form of flattery," is well illustrated in the fact that the methods used by us in preparing our programs have been copied by many dental societies throughout the United States. We send copies of them to every

newspaper in the State, and to many prominent men and politicians, so that they may see what the dental profession is accomplishing. This I regard as good policy in case dental legislation may be needed in the future. Besides this, our programs are mailed to eminent men of this and foreign countries and wherever it seems they will do most good.

All this tends to bring us before the lay public, and this I consider perfectly ethical advertising. We also equip a refreshment room, to which all are welcome, and there, under the guidance of one of the best and most loved of our members, many a good friend has been made—this perhaps is also advertising, but not to the public.

New Jersey being a small State, we have but a small membership and but minimum dues, nor can we expect a large attendance. Nevertheless, last July our registration showed eight hundred and forty-two names, nor do we flatter ourselves that all who attended registered. Our treasurer, who is the "best ever," informs us that the cost of our last session was close to fifteen hundred dollars, and it was well worth it. The force of example has been so great throughout the past years that every member of a committee, from the least important, works hard and unceasingly, for he knows his reward is coming, and politics, the great bane of dental societies, is not tolerated.

Only Members Admitted to Meetings.

Last July we followed the example of some other States, and barred out from our meetings all dentists practicing in New Jersey who were not members of our society. This action required considerable courage, but every member of the executive committee stood firm, and the end justified the means, for we took in fifty-two new members. Two strong arguments were used and were believed to be correct, viz.: it draws the line closer and makes the public distinguish between the ethical and the fakir dentist, and it makes a distinction between the men who work hard to improve their profession and standing before the people, and those who come to our meetings and enjoy everything set before them and selfishly refuse to work or even pay a minimum fee. But one important dental house refused to exhibit on account of our policy, and their fee for space was returned at once. I predict that other societies will follow this method, and dental houses opposing the plan will, no doubt, inaugurate manufacturers' exhibits in self-defense.

Local Societies in New Jersey.

In reference to our local society, the C. D. A. This we consider a most unique and independent society. By persistent advertising among the profession generally it is known throughout the world. Since it was first started in 1880 we have held meetings eight months during the year, and at each meeting there has been a banquet before the business session: we have prepared and sent programs broadcast,

which we have made both interesting in their matter and artistic in their appearance, and at the same time we have tried to give a good dinner for a small price. We have been independent from the fact that anything appertaining to dentistry is given a hearing. Of course, it is impossible in a dental society with meetings in the evening to give clinics, therefore the social side has been developed most. In our twenty-six years existence we have had all sorts and conditions of men, members of the profession and others, read papers on subjects pertaining to our profession or those closely allied to it. I believe that the Central Dental Association of Northern New Jersey is as well known as the State society in consequence of persistent mailing of programs to prominent dentists of note in this and other countries. Of course, we have had our little differences and fights, but everything in time reaches harmonious conclusion. The same rule concerning politics exists in the C. D. A. as in the State society. Any men who are willing to work on the least important committees in time may reach the highest office within the gift of the society, that of president.

In has been the aim of every member to aid in the formation of other societies, and we now have in our little State of New Jersey six local societies, all doing good work toward improving the status of our profession, the main part being that the more ethical men are organizing and creating a tendency of the public to drive out non-ethical dentists.

The annual banquets of this society have been for years the meeting ground for prominent men in the profession throughout the country.

Considerable antagonism was exhibited toward the dinner committee during the past two years because these annual meetings were held in New York. This was mainly because there was no banquet-hall with adequate service and accommodations for the large membership of the society, and its visitors, to be had in our own city. The local society and the Brooklyn society have always been on the most friendly terms, and have had many meetings together, and it is the sincere hope of the essayist that this spirit of friendship will always exist.

To recapitulate, it seems to me that the subjects which this paper should bring out for discussion are:

First.—Cater to a man's social instincts.

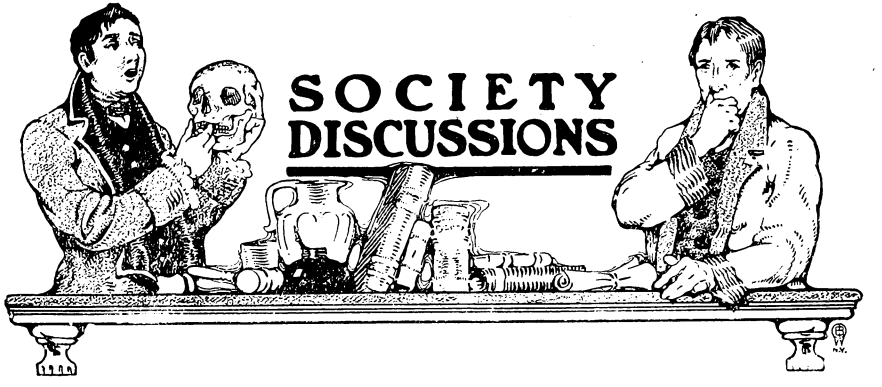
Second.—Have plenty of clinics and exhibits.

Third.—Eliminate politics.

Fourth.—Give every member who shows a willingness to work for a position the opportunity of achieving it.

Fifth.—Invite the press to our meetings and advertise ourselves ethically in this way.

Sixth.—Take the public into our confidence and thus lead them to distinguish between the ethical man and the fakir.



New Jersey State Dental Society.

Thursday, July 18, 1907, evening session. President Brinkman called the meeting to order. On motion, a quorum being present, the roll call was dispensed with.

The president announced the receipt of a telegram from Dr. B. Holly Smith stating that because of illness in his family he was unable to be present and that he had mailed his paper.

The president then introduced Dr. Alphonso Irwin, who read the second section of the history of the society. On motion the same was accepted and placed on file.

The president announced the appointment of the following committee on oral hygiene, in accordance with the suggestion of the National Association: Drs. H. S. Sutphen, Wallace F. Naylor, and Richard C. Fowler.

Discussion of Dr. Taggart's Paper.

Dr. R. Ottolengui. Instead of discussing the method, I will make a few remarks upon its utility and try to draw a comparison between the usefulness of this particular style of inlay and of other gold inlays which have preceded it.

Hitherto we have had gold inlays mainly of two kinds, one a simple gold inlay made from a single matrix which was filled with solder; the other a more complicated inlay made primarily from a matrix capped or covered with an occlusal top and either filled in solid with solder, or else partially filled with solder leaving a hollow. Both of these inlays

have this limitation, that they can not be made for any cavity unless a matrix can be made for that cavity. That is an exceedingly important point, and one perhaps that has not occurred to some. Those of you who saw the specimens passed around this morning by Dr. Taggart may have noticed the step system (I might almost say the lock-step system) of cavity preparation in those which were not cemented, and in those which were cemented the many square-ended extensions away from the main mass of gold into the more destructible portions of the teeth, areas which are liable to attack by caries. Some of you may have observed that those inlays, although not cemented in, were so firmly fixed in their position by the cavity shape, that they supported the handle-like protuberance, left on them from the casting, and that pressure on that handle does not unseat the inlay. That is due to the fact that the extension into those regions subject to attacks of caries are all made with flat angular floors, all made with square-ended carborundum wheels, or else squared after they are burred. Those almost parallel sides, and the angles in the floors of these square seats, prevent all kind of motion but one, and that is in the one direction by which it will never be forced out through mastication—the direct withdrawal of it. A matrix could not be made for that style of cavity, and yet that style of cavity affords you an inlay, when made in solid metal, which can be cemented to place without any alteration of that portion of the inlay which comes into contact with the cavity, so that you need do no undercutting of the inlay; all you need to do is to cement it in place, and then this system of steps locks it. So that at last there has been devised a system of placing a whole filling into the cavity and yet having it so locked that during normal use, it is impossible to unseat or remove it after being cemented.

Dr. Herbert S. Sutphen, Newark, N. J.

I do not think we should allow this occasion to pass without further commendation of the most excellent paper and clinic presented by Dr. Taggart. Necessarily in these meetings a great deal of theory and of scientific work is presented to us; we must peruse these and study them carefully; but when we come down to the business end it is the practical thing in our profession that we must depend upon for our success. In my professional experience I can recall nothing which has impressed me so favorably as the method Dr. Taggart has presented to us to-day. It is a distinct advance in dental operations, and I can not too highly endorse what Dr. Taggart has so skilfully worked out for us.

I have made gold inlays for a great many years; I know of one that is in the mouth to-day which I did at least fifteen years ago; of course, it

is totally different from those we make to-day; it was a hollow gold inlay, and is still doing good service. I did not call it an inlay at that time; I really did not know it was an inlay; but a case presented where I did not wish to put on a gold crown, and I can not tell to-day whether I thought it out or had read of it, but I inserted a hollow inlay in that tooth.

I feel that when I am able to obtain Dr. Taggart's machine I will have greater facility for making gold inlays. I am very proud of the fact that the New Jersey State Society is the first body that has had the advantage of having this perfected instrument presented to it.

In closing I desire personally to thank Dr. Taggart for the good I have received from his paper and from his clinic. (Applause.)

Dr. B. F. Luckey, Paterson, N. J.

I do not feel competent to discuss this paper. I do not know enough about inlays to take exception to anything that has been said.

However, whether the principles underlying this work are such as to assure skilful and permanent work I do not know. I am old-fashioned enough to feel that the work which has been done and which stands to-day as a monument to the skill of the able men who have practiced these many years, is good enough to support us all in our practice until we are assured by time and experience that this new and beautiful work should supplant that which we have done and our predecessors have been doing so long. It reminds me of the beautiful illustrations that we see in our journals of difficult operations—they seem so simple; so, too, when we watch an expert billiardist, it seems so easy to play billiards as well as he does. But when we attempt in orthodontia, for instance, to follow out these clever illustrations we find that practically, in the mouth, it is very much more difficult to accomplish than it appeared to be as we studied the illustrations, and I have no hesitation in saying that those of us who attempt to prepare cavities in the mouth with the same precision and perfection that the models which were passed around this morning show, will find that we wish we had not begun, and will probably resort to undercutting, and the old-fashioned filling, in many instances. Those of you who are supplied by nature, by education and experience with that deftness of finger and that mental ability which must necessarily be coupled with it, to perform these complicated operations, if you are also endowed with perseverance, may go on and accomplish something like the results that Dr. Taggart has himself achieved.

I have in my pocket a tooth that I filled with gold twenty-seven years ago, and extracted three or four weeks ago, filled under the influence and teaching of our revered old friend, Dr. William H. Atkinson—

cohesive coil and proper condensation. After twenty-seven years of hard daily use and being carried for three weeks among the keys and other things in my pocket, it hardly shows a mark; the margins are perfect, and I defy anyone to produce an inlay with as perfect a margin as that filling has to-day; it is absolutely impervious, and shows no signs of decay. We do not know whether these inlays will stand the strain and stress of years. They may last; I can not say they will not; but I am prepared to say as to this tooth which has stood the strain for twenty-seven years, that I see no reason why it should not stand the strain for one hundred and twenty-seven years more, if the patient lived that long.

That we have entered into a new era in the salvation of human teeth I think no man will deny. That we have advanced marvelously in the last few years in the construction and insertion of inlays no one will controvert. Whether this work will become popular depends on the skill in the preparation of the cavity, in the saving of time and in the durability of the inlay after its insertion.

Dr. Taggart. Dr. Ottolengui's remarks are always good (not because he sided with me), for he has had enough experience in the last fifteen years and since the development of the inlay to justify his assertion that the principle of filling teeth by the inlay process is correct. If the old and crude methods of making inlays under this same principle have been the means of saving very bad teeth, I do not think we need wait another twenty-seven years to be persuaded that a new, perfectly adapted, perfectly contoured and perfectly occluded filling is a success.

Dr. Luckey shows us a tooth that was filled twenty-seven years ago. Possibly there are some of Dr. Luckey's patients, as I know there have been patients of mine, who have not kept gold fillings in their teeth twenty-seven months after they were put in. (Applause.)

I saw a filling not long ago which was made in this way: When the man was a boy he was chewing some lead shot in his mouth; one got into the cavity; he tried to get it out and could not, and the harder he bit the tighter it was fastened in. That was fifty-two years ago, and the filling still remains, with the tooth in perfect condition.

Dr. Luckey. Excuse me a moment, Dr. Taggart (handing Dr. Taggart the twenty-seven-year old gold filled tooth), could a shot be bitten into such a cavity?

Well, I hardly think so.

Dr. Taggart. But I have seen fillings put in by the old and cruder methods of making inlays, which have been in

as long as ten or fifteen years. In this twenty-seven-year old tooth there was no danger of a recurrence of caries so long as the tooth was properly filled; but take a tooth of low grade, where the patient is high strung and nervous, and the teeth decay rapidly; you can fill them with inlays and save them better than any man living can with foil fillings.

Dr. Luckey quotes Dr. Atkinson; I knew him well, and for many years, and I am sure he would be the first one to-day, if he saw this process, to mount to the house tops and yell for it. He was a progressive man, and one who felt that you need not wait a lifetime to know that a certain process, which is a step in advance, is going to be good.

The average gold inlay that has been made heretofore is only an imaginary fit made with cement and when the time comes for that cement to dissolve and wear out, whatever the width of that line is, is liable to decay out. In these fillings the margins are extended into immune territory, beyond the approximal surfaces; the line is carried far enough so that recurrence of decay does not take place.

I have been putting in gold and porcelain inlays ever since the principle was first spoken of, and I have yet to see the first inlay showing recurrence of decay. I have seen them come out, and have known them to be knocked out because of faulty construction or faulty anchorage, but I have never seen a recurrence of decay. If that is not a good test, I would like to know what would be. I have in the meantime, however, seen hundreds and hundreds of great massive gold fillings with a deep blue line around them, and giving the patient a great deal of trouble; yet the gold filling is in; but we know the whole internal structure of that tooth is decaying. You will never get that condition with an inlay; the joint is hermetically sealed, and it will not go deeper that the line of cement.

I do not think it is worth while to talk any further upon these lines, because it would be hard to convince the average dentist of to-day that the principle of inlay work is not correct.

I thank you very much for the very kind words you have said and the attention you have given me. (Loud applause.)

On motion a vote of thanks was unaniomusly extended to Dr. Taggart for his address and his clinic.

Second District Dental Society, March Meeting.

The meeting was called to order by the president, Dr. Charles F. Ash. The first order of business was the reading of the minutes of the last meeting.

The names of Dr. H. J. Goslee and Dr. W. H. Taggart were proposed as honorary members, and unanimous consent was obtained for their immediate election.

Dr. Ferris then read a paper entitled "Necessity of Retention of the Temporary Teeth with Special Reference to Their Root-canal Filling."

Discussion of Dr. Ferris's Paper.

Dr. J. Lowe Young. I thank you very much for the honor of being called on to open this discussion, and, first, I wish to emphasize a few points that Dr. Ferris has brought out about the filling and preservation of the deciduous teeth. If they must be lost, as he has said, we should maintain the spaces by means of some mechanical appliance, because it means a great deal. He also advises what I consider very important, that we fill these teeth with some material that will not waste away and allow them to crowd together, because they are sure to crowd together and not allow room for the permanent bicuspids. For that reason I believe that gutta-percha in many cases is the very best for cavities in the deciduous teeth, because we not only maintain the spaces in that way, but induce an interstitial growth. It is a fact that we do not need interstitial growth in the molar region, as we do in the incisive, but it does no harm to have it. In one place the essayist speaks of the eruption of the deciduous teeth.

He says: "Nature in its plan causes the anterior teeth to develop first, and the eruption of the posterior teeth in the arch, receiving the greatest resistance in the densest structure distally, are thrust outward and forward; and after eruption produce a forward pressure on an already formed continuous arch."

I take that to mean the deciduous teeth. My own observation would go to prove that a child's incisor teeth erupt first, I believe, but they vary, whether it is the upper or lower. Sometimes we get an upper lateral, and then a bicuspid, and then the first deciduous cuspid, and then the second deciduous molar. I do not know whether that is what the doctor wishes to convey there or not.

Speaking of the eruption of the teeth, he said: "The cuspid comes last"; he goes on to say, "the latter tooth erupting last and crowding its way to assume the position of a keystone." I went over my models this afternoon, and I found eighteen sets where I could be sure of the relation in which the permanent cuspids erupted, and I found them as follows: The lower cuspid erupting before the first bicuspids, 13; the upper cuspid after the first bicuspid, 12; the upper and lower cuspid before the bicuspids, 1; the upper and lower cuspid after the first bicuspid, 4.

I believe that the lower cuspid very often, in a great percentage of cases, erupts before the first bicuspid, but that the upper cuspid erupts after the first bicuspid.

(Dr. Young, continuing the discussion, showed a number of lantern slides.)

Dr. Ottolengui. I do not think that the object of this paper was really to go into any orthodontic discussion, but rather to incite a discussion of the work of the dentist in the mouth, and in addition to the thoughts that have been brought out by the author, I want to call especial attenion to one point in relation to the preservation of the temporary teeth.

The author seems more especially to address himself to the preservation of the teeth which are likely to be lost by caries, and has pointed out the troubles that are likely to follow by lack of interstitial spacing in the temporary set.

Now I will point out one trouble that almost invariably occurs when that condition is present, and where the dentist nearly always makes a mistake in his treatment.

Dr. Ferris showed a picture of a jaw where the lower incisor (Fig. 7) was rotated. It has been common practice to remove the temporary tooth instead of making room for this twisted incisor. I think it is more commonly done in the lower jaw, but it is also done in the upper jaw. What is the result? You may make room temporarily for the four lower incisors, or possibly the four upper incisors, but by removing these temporary teeth too early, instead of having the jaw widened and the temporary cuspids retained, the result is that you practically crowd out the permanent cuspids when they arrive.

Dr. Ferris. Dr. Ottolengui has hit the object of my paper. The idea was to bring out some facts for application by the general practitioner, as I am trying to apply them in general practice.

I have recently had an enlightenment through Dr. Edward H. Angle, and I felt that this particular point was of most value to the general practitioner, therefore that is what induced me to write upon this subject.

For root filling I take a piece of Johnson & Johnson's sterile catgut of the size of the root canal, after determining the length of the canal in the usual way. Introduce that into a spring holder and dip it into the mixture, carrying it into the pulp chamber and with a pumping motion force the material through the sinus; then a ball of oxyphosphate cement is mixed stiff and forced into the pulp chamber.

Dr. Le Roy. Is this material readily absorbed?

Dr. Ferris. I believe that it is, but the eradication of the abscess I would consider vital; I do not tolerate the existence of a sinus in my practice, as one drop of pus in an ounce of saliva would change its chemical reaction from slightly alkaline to a decided acid. I thank you very much for your attention.

Second District Dental Society.

October Meeting.

A meeting of the Second District Dental Society was held at the King's County Medical Building, October 14, 1907.

President Hutchinson called the meeting to order. On motion of Dr. Gould the regular order of business was suspended and Dr. Gough presented his patient in orthodontia to the meeting. Upon the meeting being called to order a vote of thanks was unanimously extended to Dr. Gough's patient.

The minutes of the last regular meeting were then read and approved. The minutes of the special meeting held in May were read and approved.

The president, Dr. Hutchinson, then called Vice-President Frazer to the chair, and presented his annual address.

President's Address.

By R. G. HUTCHINSON, JR., D.D.S.

Fellow Members of the Second District Dental Society:

In the past our society has devoted its efforts mainly to the advancement of dentistry through the reading and discussion of papers. This, of course, is of the utmost importance, but the time has come when we must not stop at that point, but must make our influence felt outside the ranks of our profession.

For this reason I shall present briefly, for your consideration, a few topics which are of interest and importance to us as a profession. While I shall deal with several topics, all may properly be classed under the heading "Dental Education."

To begin with, the general objects of all dental societies are the advancement of the science, the promotion of the interests and the education of the members of our profession.

Much has been said concerning the standing of the dental profession as related to that of medicine. Many claim that we should be recognized as on a par with the medical profession, but, gentlemen, it is hard to obtain such recognition for our profession as a whole, when so many practice it more as a trade than as a profession. Much of our work is purely mechanical in its nature, and as such offers excellent opportunity for unprincipled men to do work that is profitable to them, but which bears no more relation to the treatment of pathological conditions than does the adjustment of artificial eyes or limbs.

Those who by their practice justify the title "Doctor of Dental Surgery" will surely receive the merited recognition, both from the medical profession and the laity

Cases have come repeatedly to my attention in which dentists have placed pieces of bridge work in mouths so badly diseased that the conditions were made infinitely worse by their presence, no effort having been made to restore healthy conditions to either the gums or teeth.

Let us all be honest with ourselves and with our patients, and endeavor to educate them to appreciate disinterested effort on our part to serve their interests and welfare.

Apropos of this let me quote from our Code of Ethics: "Article IV—'The Mutual Duties of the Profession and the Public.'—Dentists are frequently witnesses, and at the same time the best judges, of the impositions perpetrated by quacks, and it is their duty to enlighten and warn the public in regard to them. For this and many other benefits conferred

by the competent and honorable dentists, the profession is entitled to the confidence and respect of the public, who should always discriminate in favor of the true man of science and integrity, and against the empiric and impostor. The public has no right to tax the time and talents of the profession in examinations, prescriptions, or in any way, without proper remuneration."

Education of the Public.

In many of our states and also in foreign countries considerable progress has been made toward the education of the public through lectures, examination of school children and clinical work. Several years ago a committee from our State society made examination of five hundred and fifty-nine children in two of the public schools of Brooklyn. The work was not continued in this borough, but has recently been taken up in Manhattan.

As Manhattan, which is the First District, and the other boroughs, which constitute a part of the Second District, all come under the jurisdiction of the Department of Education of the City of New York, it seems fitting that some concerted action should be taken looking toward cooperation in this most worthy enterprise. To that end I recommend that a committee be appointed to confer with the First District Society to formulate a plan whereby our profession shall officially indorse and aid in the movement for public education on dental subjects.

During the summer I issued a letter to the members of this society, calling their attention to the organization of an association for the education of the public which was being promoted by a commercial corporation.

We must be careful not to allow ourselves to be drawn into such schemes, which while they profess to be disinterested and purely philanthropic, are unquestionably intended to promote commercial interests. If, however, we refuse to participate in such organizations it becomes our duty to take up such work and carry it on in a strictly ethical manner. I see no reason why we should be called upon to furnish professional services gratis, but I believe that we should do something to show our attitude toward the movement. We can at least pass resolutions calling the attention of the Board of Education to the fact that the physical and mental welfare of school children depend largely on a healthy condition of the oral cavity, and urging the establishing, at the expense of the department, of a series of lectures on the subject of oral hygiene.

Also that it is as important to have examinations made by a competent corps of dentists as to have medical examinations. Such a communication would undoubtedly have weight coming from the official representatives of our profession.

The Medical Society of the County of Kings is now giving lectures on subjects of interest to the general public, under the auspices of the Brooklyn Institute of Arts and Sciences. Surely it would be to the credit of the Second District Dental Society to be identified with such a movement.

Public Health Defense League.

Last year the attention of our society was called to an organization whose national headquarters are in New York. I refer to the Public Health Defense League. Its objects are:

"1. To combat all forms of quackery and charlatanism.

"2. To prevent food adulteration and drug substitution.

"3. To prevent the sale of narcotics and alcohol disguised as patent medicines.

"4. To prevent the circulation of indecent medical advertisements.

"5. To advocate the establishment of a national health bureau.

"6. To carry on an educational campaign for the spreading of accurate knowledge concerning the public health and the inculcating of higher health ideals.

"7. To protect the public health by assisting the constituted authorities in the enforcement of existing law and by urging the enactment of uniform legislation in all the states on matters relating thereto.

"8. To co-operate with other societies interested in any public health problem, and ultimately to effect a plan of union or co-operation of all organizations interested in the public health."

The League is composed of eminent citizens of all vocations, and is supported by leading scientific, educational and philanthropic organizations throughout this country. There is every assurance that by January first the membership will reach five thousand.

In a letter which I received recently from the assistant secretary he says: "I beg to assure you that any action your society may take in the way of indorsing the League in its work will be most heartily appreciated by us. I have myself spent the last three months in the work of organizing the Illinois State Branch of the League, and there the dentists co-operated with us and helped us materially in the work of extension. Last week one of our representatives addressed the Odontographic Society with the result that a very large number came over to the League as members. A committee was appointed to co-operate with the League, and formal resolutions were passed indorsing our work.

"If there is any information upon any special point you desire and you will let me know I shall be glad to assist you in any way that I can."

So far we have been able to accomplish comparatively little in the way of suppressing quackery and charlatanism, and if by co-operation with this League we can bring about the enactment and enforcement of laws which will deal with such evils, it behooves us to do so. Our State Law Committee has more than enough to do in prosecuting illegal practitioners. Not only is it too much to ask the dental societies to do this kind of work alone, but as the general public is the greatest beneficiary it seems only proper that an organization representing all good citizens should do a considerable share of such work.

For several years we have omitted the reading of papers at our December meeting, and I recommend that we arrange to take up the consideration of this subject at that meeting, and have a representative of the League present to furnish information as desired. There is no time for business of that character at our meetings when papers are read and discussed and such matters are too important for us to pass them by entirely.

Second District Auxilliary.

While the Second District Society represents officially ten counties of this State, we have in reality only a very small representation outside of Long Island.

Recently the old Second Judicial District has been subdivided, the five counties north of Manhattan having been made into what is now called the Ninth District. This does not apply to our State society divisions, and for a number of reasons it seems inexpedient that a new district society should be formed.

It is and always has been hard to induce members of our profession in these upper counties to join our society on account of the difficulty experienced in attending our meetings here. If these men could organize an auxiliary society, and hold their own meetings nearer home, at the same time being members of this society, I believe many could be prevailed upon to become members, so adding materially to the influence and welfare of the general organization.

I therefore recommend that a committee be appointed to confer with the proper officials of the State society in regard to perfecting such an organization.

In Memoriam.

In closing it is fitting that mention should be made of those who have been taken from our midst since our last regular meeting.

Never before in the history of our profession have so many men of prominence in this locality been lost from our ranks in so short a time.

Our own beloved Dr. Brewster was the first, his death having occurred soon after our annual meeting in April. At a special meeting in

May suitable resolutions were adopted, as you will have noted in the minutes of that meeting. It is almost entirely due to the devoted and untiring efforts of Dr. Brewster that our library is at present in such good condition.

The others who have left us, Drs. Littig, Hart, Miller, Goldsmith, and Eugene Palmer, were all members of New York societies, and were well known and most highly esteemed by all of us.

We will all miss the genial presence of these departed brothers, most of whom were very frequently with us and whose words were listened to with pleasure and profit.

May their lives be to us an inspiration to do the best of which we are capable in our profession.

On motion the president's address was referred to a committee of three to be hereafter appointed, to report at the November meeting. President Hutchinson then resumed the chair.

Dr. Charles A. Meeker, of Newark, N. J., then presented a paper entitled "Some Random Society Experiences."

Discussion of Dr. Meeker's Paper.

Dr. W. W. Walker, New York.

The very pleasant duty I have to perform to-night is to congratulate the society on the selection you have made for your president, Dr. Hutchinson. I have known the doctor for a great many years; I knew him when he was a student in the New York College of Dentistry, and I knew him on that afternoon when, having passed through the ordeal of the dental graduate, he came home and announced to his fond mother and father that he had passed, away up in his class. That was a great day in the Hutchinson family. They thought that he was the best of them all, and I felt sure that if he only had a half a chance to get up to the top of the ladder, he would do so. And so he has; for he is not the coming man, he has already come, has reached the top, and I know that he will prove an honor to this society.

As to the paper I am to discuss to-night, the essayist has really left nothing to discuss. There is no man who is so pre-eminently fitted to manage the executive work in a dental organization as Dr. Meeker, and he told you to-night that he has been at it ever since his boyhood days—nobody knows how long that is (laughter). At the last meeting of the New Jersey Society one feature was absolutely a dead failure. I felt sorry for my dear old friend, President Brinkman, when he almost had

to go around with a bell to get the members of the society into the hall. It is a mistake to have the exhibits and clinics in the same hall as the meeting. The two must necessarily be divorced.

I went down to the dental meeting at Jamestown and I never saw such a meeting. The clinics were all right, but they had only a little screen thrown between them and the meeting place; all the exhibits were open, and there were very few to listen to the paper. The star paper on that occasion was by my friend Dr. Van Woert, of this society, and it really outdid the other attractions for a little while, but even with all his brilliancy he could not hold the attendance of the members, because they wanted to go around and look at the exhibits. There is where the New Jersey Society and all the other societies make a mistake; if they want to interest the profession in the clinics, and the exhibits, and the essays, then these must be separated. The First District Dental Society has its clinics in the morning and afternoons on the east side and the meeting and the reading of the papers at another place in the evening, and that is a great improvement over the Jersey meeting. However, if Dr. Meeker and the committee could have their own way about it, I have no doubt this could be remedied, and I doubt whether it is a matter that can be avoided.

I do not know whether the dinner which they have at the C. D. A. meetings is an advantage or not; I know the boys gather there about six o'clock, and by the time the dinner is finished a good many of them couldn't discuss any subject (laughter). But I have no fault to find, I have been there myself, and have enjoyed it. Meeker says the way to get at a man's heart is through his stomach; that may be all right, but at a dental meeting if you want to get real theory and practice from the members you don't want to give them so much to eat and drink.

Speaking about politics, you never in this world can keep politics out of any kind of an organization. From the time Meeker went into office, as he says himself, a kid just out of his school days, he has been in politics; but a little politics in a dental or any other kind of an organization is a good thing, especially when they develop opposition, for opposition sometimes gets the old members back into business, for they say: "Here is where we have to attend to things or else get out," and they get to work.

In Chicago there were so many local societies that not one of them was attended as it should be, and Dr. Crouse, or some other wise man, consolidated all the dental societies in Illinois, and now they tell me they have a happy band of members; all the local societies being united and the State society being one of the largest dental organizations in the

world, and I am very glad to know it. I do not think that could happen in New York City—it might in Brooklyn!—for in New York City there are too many petty jealousies. We have a great many men who, if they can not rule, are bound to ruin. In the Odontological society they had the same trouble. But one man who could not have his own way started another society. He said he would leave the members of the Odontological society who wanted to stay there to do so, but he gave dinners and tried to coax them away just the same. The chances are we have the greatest society in the world barring New Jersey—and this one. We are doing a great scientific work, and we let the disaffected ones go their own way, and it will not be a great while before they will want to come back.

The sweetest of the old Irish poets was Tom Moore, and he wrote a poem called, I think, "The Sweet Bells of Shannon." And he wrote another that went something like this:

"Oft in the stilly night, while the other boys are sleeping,
You can find Meeker in his little den working up a meeting."

(Laughter.)

We all know that Meeker is working night and day for the advancement of dentistry; no dental scientist—Heitzman, Boedecker, Miller or any of them—ever did any more work in their line than Meeker has in this particular branch of dentistry, and by it he has elevated the profession immensely, and to Meeker belongs the credit.

Dr. H. S. Sutphen. Newark, N. J.

I can not go back quite as many years in this work as can the essayist, or our friend Dr. Walker, of New York, but I have had five or six years' experience, and I can say it is certainly very interesting to see the development of ideas as they come from the younger members. The older members do not know it all; they started the work and have brought out a great many good ideas, but these younger men, who, from year to year, come into the society, have done a great deal toward the elevation of the profession.

Of course, I only know about the work in our own State particularly and our local society, but I can see in our own city and in the towns of New Jersey, where our members are, the great good that has come to the dental profession from the work which these members have done in the society, both in the elevation of dentists themselves, in the education of the people and the patients who come to us for our services, as well

as the good feeling which has been promoted; dentists being brought closer together realize that each individual is not the whole thing and there are other people who know something and can accomplish something.

The social side is very prominent in bringing out that condition of affairs. When dentists merely meet on the street they pass with a nod of the head, and sometimes not even that; but where they get together and have a little something to eat, they get closer together and better acquainted, and they find out the other fellow is just as good as themselves and has qualities to be cultivated, and they ascertain that they are all jolly good fellows together.

Under the old regime a dentist was almost an enemy to his brother. His methods were secret, and the operations in his office and laboratory were absolutely his own; he would never speak of them to others, and would not allow his brethren to come and witness them; entrance to the laboratory of a fellow dentist was almost a thing impossible.

The better we educate the people to the fact that there is good and pure dentistry, the better our income will be; and the more we educate ourselves to a higher class of work the more good shall we be able to accomplish.

Why is it, in a city as large as Brooklyn, that there is such a slight attendance as we have to-night? It is so everywhere. The attendance shows but a very small portion of the membership. Is it because the members do not take the interest they should? Certainly it is not because they do not have interesting papers presented. Instead of this room holding the attendance, there ought not to be a room large enough in this building, even though the people stood up, in view of the character of the papers that have been presented before this society. There is something wrong with the dental profession; evidently they do not care to be educated, and something ought to be done to increase their interest in this work.

Dr. Jas. Palmer. I came here to-night expecting to hear something about experiences in dental meetings and hoped that reference would be made to such occasions other than in New Jersey, but since the paper has referred so much to the meetings in that State I desire to add a few words to what has been said so well by Dr. Walker in commendation of Dr. Meeker's essay.

Some of the younger men will have to read the paper very carefully, and go back into what is really ancient history, to understand the

condition of affairs that existed in New Jersey when he first became secretary of the society there, and the work that has been done since that time.

In any dental organization there must be some few men, and very frequently it is only one man, who will do the routine work necessary to carry the society toward success, and there is no question whatever in the minds of those who know the history of the New Jersey State Society, as well as the C. D. A., that Dr. Charles A. Meeker is the man who has done the work that led to their success. Whether it has always been done according to your idea or mine is not the question; he has won success for both societies, and it is the result that appeals to us.

For a great many years during the early history of the C. D. A. its meetings were held from house to house and often there would be no collation, or if there was it would consist of crackers and cheese with possibly a bottle of beer, but in those days the society ran down a good deal, and the question of a banquet was discussed, and it was decided to hold one before each meeting; ever since then the society has grown, until it has become what it is to-day. I most heartily agree with Dr. Meeker's ideas in that respect, that the social side should always be catered to, for after meeting around the table members will feel far more friendly than when simply meeting in the society hall.

Dr. Benj. F. Luckey, Paterson, N. J.

I have been wondering ever since I listened to the paper of Dr. Meeker just exactly what its object is, for it took a turn somewhat different from what I anticipated, and just what interest the rise of the New Jersey Society could be to the Second District Society I could not see.

I have not attended these meetings as much as I should like, and I do not know the extent of your success, but that Dr. Meeker has pointed the way to success there is no question. In all my experience I have never met a man with the executive ability along the line of organization work such as is possessed by Dr. Meeker. I have known him a great many years. Whether he is a good or poor dentist I do not know —I presume a good one—but that he is a good organizer and director, I, and most people in this room, do know. The points brought out by him to-night are admirable and are born of his own experience. One of the strongest points is that of publicity. The public press is more powerful than the pulpit or the philosophers of old; nothing will more quickly make or break any man or organization than the public press. Generally speaking, a man's success is assured provided he has the ability to produce, in the ordinary parlance of the day, "the goods." A man who

opens his office on a side street, puts out a modest little sign, or none at all, and depends upon his professional skill and the influence of his personal friends for success may arrive some day; more often he never does arrive. The man who has the courage to place his sign in a place where it is seen of all men, who can bring to his support the help of a good press agent, who has judgment as well as skill in the use of his hands, will arrive much sooner—and you all know it. You know the men who get to the top are the men who do not sit on the back seats and keep quiet, but men who put their claims forward, who not only have ability and skill, but who are not troubled with too much modesty as well.

Every young man has a right, however, to hope some day to occupy the place of an Atkinson, a Dwinelle, of a Miller, or of any other of the men whose names we hold so high, and never one of those men was elevated by the efforts of his friends, but by his own energy and ability. Whether or not this is along the line of the paper of the evening I hardly know, but it is the trend my thoughts take now, and may perhaps supplement that which the essayist has been presenting to you. I have enjoyed being with you to-night, and while it takes a long time to get from my home to the meeting I feel that I have been wholly repaid and hope that my visits may in the future be not so infrequent as they have been in the past.

Dr. R. M. Sanger, Orange, N. J.

As I listened to the paper to-night—which, of course, was a very brainy paper, because, as you all know, it was written by the ablest man in that line in the dental profession—I was impressed with the fact that the title of the paper and the paper itself do not agree. It seemed as though we were living in the atmosphere of the past and not of the future, and yet I know the essayist's thought is to give us something to spur us on to a successful future, and I shall speak for a few minutes, with your kind permission, of my personal experience in dental meetings.

It was my fortunate lot to enter the dental profession just about the time when dental meetings came in vogue, and I have found these meetings a very liberal education. It is not necessary to go to Europe, to Stockholm, to Paris, or to London to secure a liberal education in our profession; we can do that by attending the dental meetings and having our views broadened. That is my own personal experience. When I first graduated I thought I was "it," but by attending dental meetings I found that there were a number of men who thought the same thing about themselves, and when we came to exchange experiences I found that there were many who knew more than I did.

Then I found, too, that from no school or faculty did I acquire the knowledge that I could gain through my acquaintance with those whom I met in dental meetings; through chatting with them, listening to their papers and looking at their clinics, and I have come to the conclusion that there is no man so humble, so unpretentious or so confined in his environments who does not have some information that I want and which he alone can give me. There is not a single student in my classes who can not tell me something that I do not know, some helpful suggestion to help me in my practice and make me a broader man and assist in a more liberal education.

That is what dental societies have done for me.

Besides that they have brought us all into close contact with the greatest minds in the dental profession and in close communion with our fellow-men as nothing else would do. There is not a young man in our profession to-day who can afford to miss a single meeting of his society, and so I say, God bless the man who organized our dental societies and made the dental profession what it is to-day.

Dr. F. C. Van Woert. Dr. Sanger spoke of the necessity of intercourse with one another in the dental profession. That has been my experience, and I have always made it a point to never turn my back on the lowliest of those I met, and you know that in the former days I did a great deal of traveling. Some twenty years ago I read a paper before the Vermont Society at Montpelier, Vermont, and at its close I met a number of the members who wanted me to call upon them, and all that sort of thing, and one of them, a typical farmer dentist, asked me to call on him. I do not know what it was possessed me to do so, but I did, and I learned from him a very valuable thing, for I found that the cord on his dental engine apparently had no joint. I asked him where he got it. He said, "You fellows in the city can go to dental depots and get a new belt when yours wears out or breaks, but we can't; we have to improvise something when we get into trouble. I broke the belt on my engine several times, and it got so short I could not repair it and did not know what to do, so finally I found a good extra long corset string of my wife's and made up my mind that that would make a very good belt, and I sewed it together. It did not work quite right, and I devised a scheme of fixing it so that when you pulled it, it tightened up and made practically a jointless belt."

That repaid me for the trip, for I came home and told of it, and Johnson Bros. began making their belt in that way from that time.

So we can profit from our dental meetings, it makes no difference who the individual is who makes a suggestion or how little regard you

may have for the subject he is presenting ,and it behooves every man to pay attention, that he may profit as I did.

Dr. Thadeus Hyatt. There is one point in the essay that I would particularly emphasize, and that is the notifying of the press of our meetings and of what the society does. I know very well through my experience with the members of this society collectively, and with the members individually, that any suggestion of public education usually meets with a very cool reception.

Some years ago, when Dr. Turner was our president, I advocated at a meeting of this society the taking of some steps looking toward lectures to be given to the public, and Dr. Turner looked at me with a great deal of pity when my motion was not even seconded. Now dentists are beginning to catch up with the times, but formerly the dental profession, while in advance in many ways, was twenty years behind the times in regard to being in touch with the public. The Brooklyn Institute of Arts and Sciences, in conjunction with the Kings County Medical Society, is giving a course of lectures in this very building, and the medical profession for twenty or thirty years past has been giving a series of lectures to the people so that there is not one man in a hundred thousand but recognizes what the medical profession stands for. But when I first entered dentistry I never met a patient who knew anything about the profession, yet only to-day a patient spoke to me about a new kind of cement that was being used, and it seems to me the people are awake. Many of you know that I am on the regular staff of the Board of Education, and I have been giving lectures in the public schools and meeting five or six hundred people at every lecture, and they ask me questions, yet they do not even know that there is such a thing as a dental society. Then, too, people come and ask me to advertise, and I tell them I can not because I am a professional man, and they ask me whether the men who do advertise are not professional men, and I am thus able to explain the matter to them.

I am very glad that Dr. Meeker has advocated such a radical change from the old—what I call—"sleepy days." The wideawake world is out for learning and desires information to-day, and we should all give the subject as much publicity as possible.

Dr. Chas. A. Meeker. I had hoped there would be more criticism than there has been, but you all seem to agree with me! What I regard as the most important part of my paper, and that which was discussed by Dr. Hyatt, did not originate with New Jersey, however, but wherever any remarkable case of surgery or

medicine occurs it invariably gets into the public press, and the medical profession gets the adantage of it, and thoroughly ethical men are thereby advertised, and so it should be with the dental profession.

I said our income is mainly derived from men who have to work for their living, and those are the men who, while they have not time for reading fiction or scientific work, read their newspaper, and if our doings are reported in the public press those are the people who will be educated, and they form by far the greater part of the public. Furthermore, by this means the people are enabled to distinguish between the ethical and the unethical dentist.

Dr. Walker's criticism of our Jersey meetings is doubtless justified, but we hope some day to be able to separate the clinics from the society's proceedings.

My purpose in presenting this essay has, I think, been accomplished; it was to show what one State society has done in order to illustrate how to make a successful dental society. (Loud applause.)

EDITORIAL

Dental Societies, and Society Management.

What is a dental society, and what is the primary object of all such associations? A dental society is not merely an organization with a membership limited to dental practitioners, for conceivably a golf club might have similar limitations. A dental society is always an association of graduate practitioners avowedly in search of post-graduate knowledge, and by combined effort aiming toward the advancement of dental science and art. Bearing this definition in mind, it is ever possible to test the success or failure of any specified dental society, for just in proportion as it adds to the sum of dental knowledge, and distributes the same for the benefit of the profession, a society is a success; contrarily. in so far as it fails to do this it is a failure.

Local, State and National Societies.

In the United States we have local, state and national bodies. The local society fulfills its mission if it furnishes its own membership with information regarding the new things in dental science, which may originate beyond the sphere of its own locality. The State society may be measured by the same standard as the local, except that its territory is larger. The national society should attract to

its conventions not only the scholars of this country, but it should draw from the entire world, and its annual program should be a résumé of dental progress for the year.

Dr. Charles Meeker, in a paper read befort the Second District Dental Society (published in this issue), gives us a graphic account of his connection with two of the most successful dental organizations in this country, and those engaged in the management of societies elsewhere will profit by reading what Dr. Meeker tells us. Many causes, of course, have contributed to the success of the New Jersey State Dental Society and the Central Dental Society of Northern New Jersey, but the most prominent fact in the history of both bodies is that politics has been kept in abeyance, and the usual scramble for office has been practically unkown in New Jersey. There has rarely been any contest, and the election of officers usually occupies about five minutes' time. The plan has been to keenly observe the younger element, and to invite newcomers to take a part in the active work by filling a place on a committee. If such a man shows any executive ability whatever he is encouraged and advanced, and the presidency of the society is ever held before his eyes as the certain reward of his labors. Year by year he is appointed on more and more important committees, until at last he is made vice-president and then president. This plan accomplishes good in two ways. Every man is encouraged to labor for his society, knowing that work, and not political influence, will gain him the highest honors. Secondly, the president is always one who, having served on all committees, is competent to guard the interests of the society at all points.

The American Society of Orthodontists.

The American Society of Orthodontists is a national society, which has been marvelously successful. Within seven years this little band of coworkers has accomplished more than any other dental organization has achieved in a similar time in the history of our profession. It has not only established a separate specialty in the medical world, but it has given to orthodontia a prestige as a science and an art which it might well have required a quarter of a century to attain. Here again we see a society accomplishing its mission largely because its constitution prevents the ingress of political lobbying, and office seeking. Its method of voting is admirable. At a stated

period prior to an election a ballot is sent to every member by mail, and each forwards a list of names as his choice for various offices. These the secretary examines and then prepares a final printed ballot carrying two names for each elective office, these two having received the highest number of votes in the nominating ballots. Each member sets his mark next to the names of his choice, signs his ballot, and mails it to the secretary, who holds them unopened until the meeting convenes, when the nominating ballots are first examined to make sure that the secretary had made no error, and then the final ballots are canvassed before the board of censors. This secret mail ballot accomplishes two important ends. It absolutely prevents lobbying, and it insures a full vote of the entire paid membership.

The New York Study Club.

Within a year an entirely unique dental society has sprung into existence, and is known as the New York Study Club. This perhaps is the truly ideal local society because it fully meets the test, in that it brings from afar experts who teach what is done elsewhere. The membership fee in the Study Club is nominal, but a clause in its by-laws provides that five members may elect to take any course of study, and also may choose a teacher. The Clinic Master then undertakes to engage the teacher, and to fill the class, up to twenty or twenty-five. Those composing the class pay a pro rata share of the teacher's fee. The Study Club has already successfully conducted several courses of study, which is in the nature of post-graduate work, and there is no doubt that this style of dental society is destined to play an important part in the professional work of the future, because more than any other it succeeds in adding to the real knowledge and culture of its members, by securing instruction from specialists.

Again we observe that the promoters of this new movement have most carefully drawn the constitution so as to eschew politics. It is therefore evident that the time is fast approaching when we shall see a divorcement between the politicians and the students in dentistry.

SOCIETY ANNOUNCEMENTS

National Society Meetings.

American Dental Society of Europe, London, England, beginning July 31, 1908.

Society Meetings.

Alumni Society of the Angle School of Orthodontia, St. Louis, Mo., December 12, 13, 14.

Institute of Dental Pedagogics, New Orleans, La., December 31, January 1, 2.

New Jersey State Board of Registration and Examination in Dentistry, Trenton, N. J., December 9.

New Mexico Board of Dental Examiners, Albuquerque, N. Mex., May 26, 27, 1908.

Ohio State Dental Society, Columbus, Ohio, December 3, 4, 5.

Texas State Board of Dental Examiners, Waco, Texas, December 16.

Institute of Dental Pedagogics.

The fifteenth annual meeting of the National Institute of Dental Pedagogics will convene in the St. Charles Hotel, New Orleans, La., December 31 and January 1 and 2, for which the following program has been prepared by the Executive Committee. All teachers in dental colleges are respectfully requested to attend this meeting:

Program.—1. President's address, Dr. J. H. Kennerly, St. Louis. Discussion.—Dr. A. G. Fredericks, New Orleans; Dr. H. E. Friesell,

Pittsburg. 2. Report of Commission on Nomenclature, Dr. S. H. Guilford, Philadelphia. Discussion.—Dr. J. D. Patterson, Kansas City; Dr. C. R. Turner, Philadelphia. 3. Recitation Teaching in Orthodontia, Dr. Calvin S. Case, Chicago. Discussion.—Dr. S. H. Guilford, Philadelphia; Dr. B. E. Lischer, St. Louis; Dr. C. R. Jackson, Indianapolis. 4. A Method of Teaching Technical Operative Dentistry, Dr. A. E. Webster, Toronto. Discussion.—Dr. D. M. Cattell, Nashville; Dr. H. T. Smith, Cincinnati; Dr. Byron H. Strout, Boston; Dr. H. M. Semans, Columbus. 5. The Teaching of Prosthetic Dentistry, Dr. Walter M. Bartlett, St. Louis. Discussion.—Dr. R. M. Sanger, East Orange; Dr. Hart J. Goslee, Chicago; Dr. Ellison Hillyer, New York; Dr. H. P. McGruder, New Orleans. 6. Teaching Operative Dentistry and Dental Pathology, Dr. Harry B. Tileston, Louisville. Discussion.—Dr. D. M. Gallie, Chicago; Dr. L. M. Waugh, Buffalo; Dr. S. F. Foster, Atlanta. 7. A Method of Teaching Dental Ceramics, Dr. W. L. Fickus, Pittsburg. Discussion.—Dr. W. M. Randall, Louisville; Dr. C. K. Buell, Buffalo; Dr. W. F. Lawrenz, St. Louis. 8. The Didactic Teaching of Dental Anatomy, Embryology and Histology, Dr. C. D. Lucas, Indianapolis. Discussion.—Dr. William Bebb, Los Angeles; Dr. F. B. Noyes, Chicago; Dr. C. L. Babcock, Milwaukee. 9. Report of master of exhibits, Dr. F. C. Friesell, Pittsburg. 10. Report of master of new teaching facilities, Dr. N. T. Yager, Louisville.

B. E. Lischer, Secretary and Treasurer.

Kentucky State Board of Dental Examiners.

The Kentucky State Board of Dental Examiners will meet for the examination of applicants at Louisville, on the first Tuesday in December, 1907, at the Masonic, commencing at 9.00 o'clock A. M.

Each applicant for examination shall be required to deposit with the secretary of the Board his or her recent photograph, with signature on the reverse side, both of which shall be certified to by the dean of his or her graduating college, or other parties acceptable to the Board. Applicants must be graduates of reputable dental colleges.

Application for examination must be made upon blanks furnished by the Board, and must be accompanied by a fee of $20.00 and the above-mentioned photograph, all of which must be filed with the secretary ten days before the date of examination.

Kentucky State Board of Dental Examiners,
By J. Richard Wallace, Secretary.

The Masonic, Louisville, Ky.

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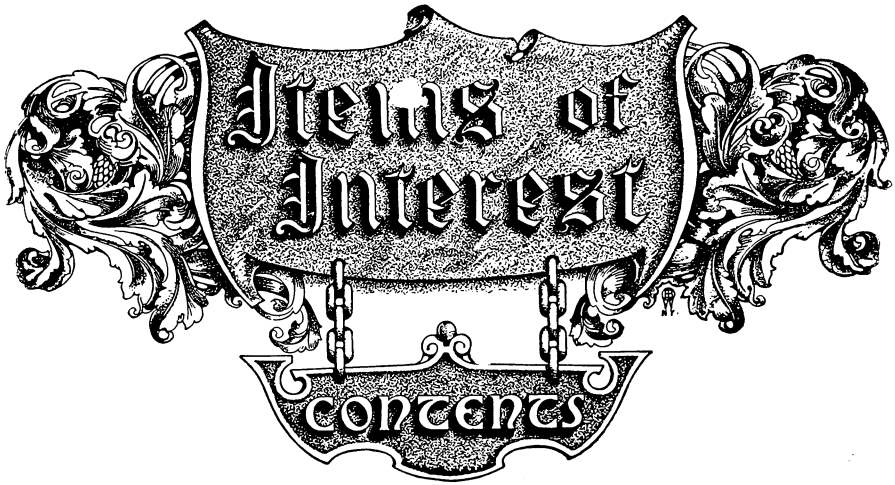

Exclusive Contributions

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Orthodontia

Society Papers

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Editorial

Society Announcements

Subscription, $1.00 per year, in advance, to United States, Canada and Mexico. Other countries, $1.75. Single copies of this issue, 15 cents.

Subscriptions received at any time, to date from January or July. Advertising rates made known on application. Remittances preferred by registered letter, postal money-order, or bank draft.

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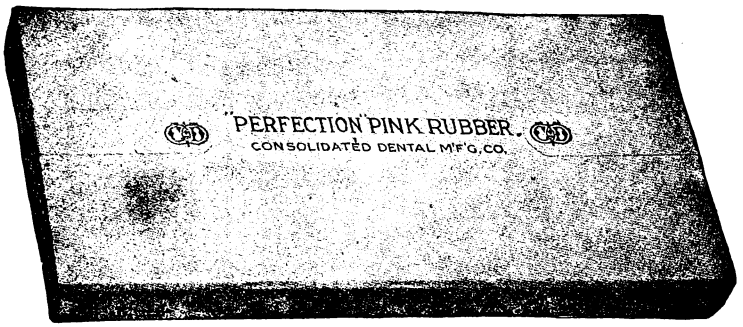


What every dentist wants is a lifelike appearance in his rubber plates. That is why

PERFECTION PINK RUBBER

keeps on rising in professional favor.

It is unmatched for color and finish and gives an artistic simulation of natural gum appearance that cannot be equaled by any other rubber. It does not fade or discolor. It is very TOUGH AND STRONG and may be used for all the purposes of vulcanite rubber. Sample free.

Price, per half pound box, - - -	$3.00
" " quarter pound box, - -	1.50

FOR SALE AT ALL LEADING DENTAL DEPOTS

Consolidated Dental Manufacturing Company

NEW YORK

TIN FOIL

"CRESCENT" TIN FOIL

CHEMICALLY PURE.

IN BOOKS.

Crescent Tin Foil is absolutely pure and specially prepared to meet the requirements of a filling material. Tin Foil is an excellent filling and especially in combination with gold, it produces a filling of remarkable hardness. The effect of tin fillings on dentine has been termed as "progressive calcification," whereby cavities lose much of their sensitiveness. Pure tin foil does not conduct heat as readily as gold, nor is it subject to such rapid thermal changes. Much of the tin foil on the market is unfit for filling cavities and its impurities cause the destruction of the teeth in which it is placed. It has been said by a distinguished practitioner that if all the other filling materials were blotted out of existence and only tin foil remained, more teeth would be saved than ever had been. Every dentist is confronted with cavities which require a filling of these characteristic properties, and should have on hand a supply of Crescent Tin Foil (Chemically Pure).

Price, Nos. 2, 4, 5, 6, 8, 10 and 20, per book, - - $ .40
" Nos. 40 and 60, per book, - - - - - - .50

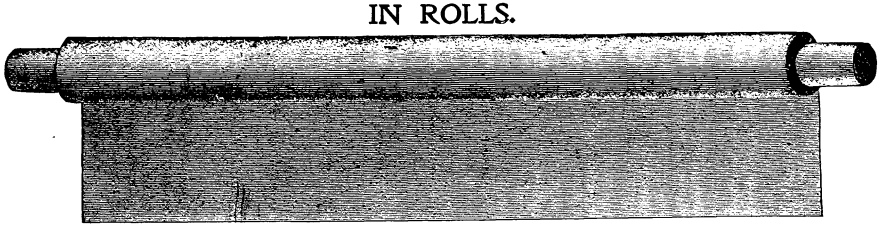
STANDARD TIN CYLINDERS.

These cylinders are made of Crescent Tin Foil, retaining all of its excellent properties. In ¼-oz. boxes. Assorted numbers in each box.

Price, per box, $1.50

CHEMICALLY PURE TIN FOIL

IN ROLLS.



The convenience of Tin Foil in rolls has made this style very popular. The purity for which our Tin Foil in books is so well known is also characteristic of our Foil in rolls. Each roll contains 5 yds., 6⅛ inches wide. In thickness it corresponds with No. 6 Foil in books.

Price, per roll, $ .25

HEAVY TIN FOILS (in Rolls).

This Foil is .005 in thickness and the best as well as the most reasonable material to use for patterns and general laboratory use. It is sufficiently stiff to retain its shape and is easy to cut. Each roll weighs about ½ lb. 3 15/16 inches wide. Put up on a wooden spool in cylinder boxes.

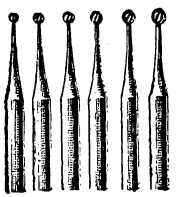
Price, per roll, $ .50

CONSOLIDATED DENTAL MANUFACTURING CO.

Realization

Cross-Cut Enamel Burs

Round



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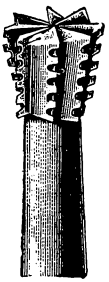
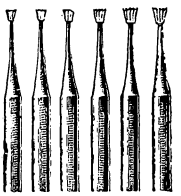


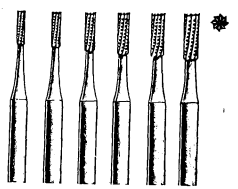
Inverted Cone



535 536 537 538 539 540

Enamel Fissure Burs

Square End Fissure



557 558 559 560 561 562

These burs are made entirely by machine. Their cutting edges are multiplied by the transverse serrations and every edge is sharp. Realization Cross-Cut Enamel and Enamel Fissure Furs are accurate, perfectly finished, and without rough edges. Quiet, smooth and effective cutting of enamel is insured. With so many points attacking the enamel at once, these burs are very powerful, and remove tooth structure more aggressively and quickly than any other form of bur. Cavities prepared with Realization Cross-Cut Enamel Burs have walls fissured ready for the reception of plastic fillings, which cling tenaciously to walls so prepared.

PRICES

Per Dozen . .	$1.50
Per Half-Gross .	8.00

Get the Sealed Package

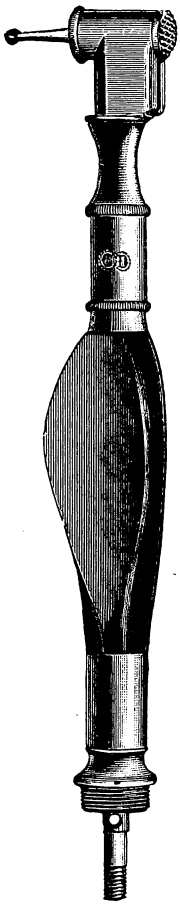
For Sale at All Leading Dental Depots

Consolidated Dental Mfg. Co.

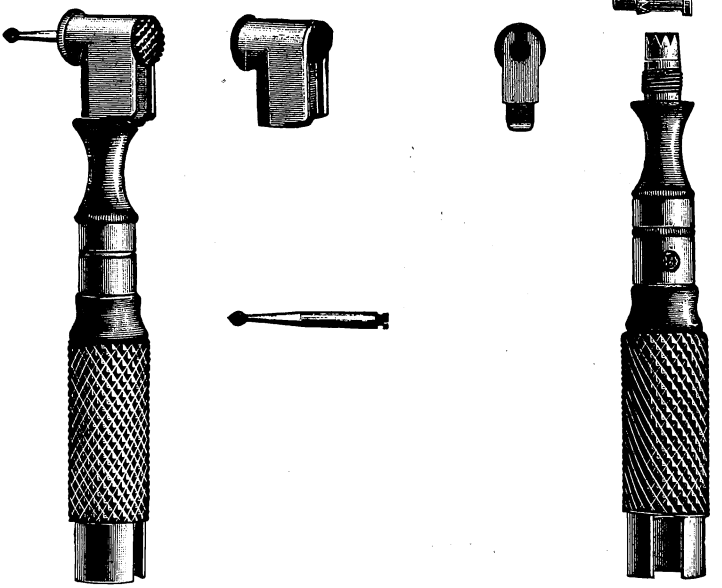
CONSOLIDATED ASEPTIC RIGHT ANGLES

STERILIZABLE

Style A



Style B



THE distinct feature, adding a much needed and decided advantage over all other handpieces, is the ingenious improvement whereby these Right Angles can be quickly taken apart for sterilizing and reassembled with equal facility.

The septic conditions, bacteria laden fluids and putrescent organic matter with which handpieces come in contact and become tainted, involve a danger which the course of modern dentistry is ever seeking to overcome. These sterilizable handpieces completely supply every requirement in that direction to insure entire antisepsis.

They can be taken apart and assembled in a moment without removal or loosening of any screws, nuts, or clamps, or necessitating any adjustment or special regulation of the parts. This very desirable feature in no way conflicts with the simplicity and strength of their construction or practical efficiency and running qualities.

By unscrewing the head, all parts are released. Wrenches or screwdrivers are not required for removing or assembling them. These Angles take the burs and instruments fitting the No. 2 Right Angle, and therefore the purchase of a new stock of burs is not necessary.

PRICES

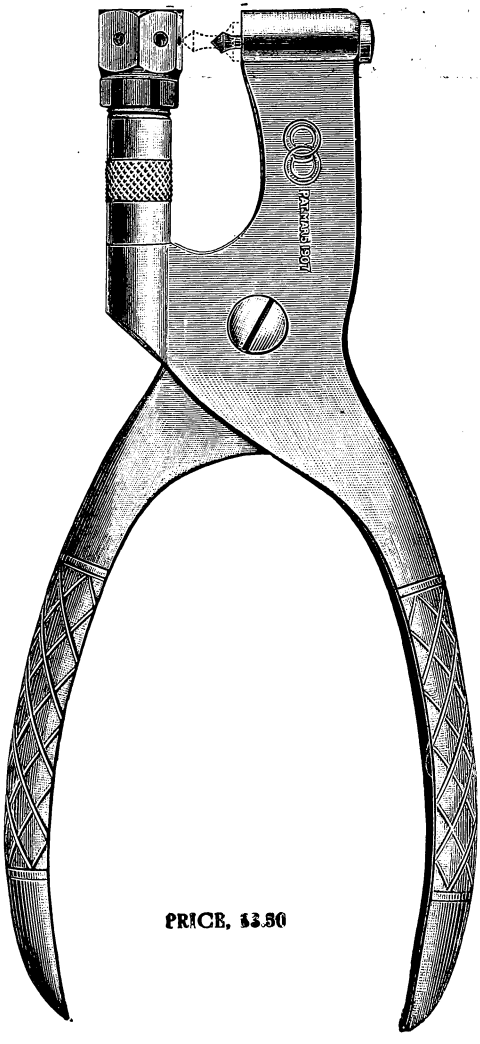
STYLE A

Right-Angle Handpiece with Collar attached for Slip Joint	$6.00
Right-Angle Handpiece without Collar for Slip Joint	5.00
Collar	1.00

STYLE B

Right-Angle Attachment to fit over Consolidated or No. 7 Handpiece . . $4.00

CONSOLIDATED RUBBER-DAM PUNCH



In design and construction this is the most improved and practicable rubber-dam punch on the market.

A unique device of decided practical value is the octagonal-faced cylinder, perforated with six holes of different diameters.

Its inner bearing is grooved and by the action of a ball-ratchet the cylinder is held firmly in any desired position under the point; by revolving it, each face stops automatically with the hole exactly beneath the point.

While holding the dam in place it is easy to turn the cylinder without interference, as the serrated end, or grip, is entirely free. This design affords ample space to punch the widest dam at any place.

The cylinder faces are of extra hardened and tempered tool steel with sharply cut holes, and are sufficiently broad for practical purposes.

The cone-shaped point is made of the same selected steel and will punch either large or small holes perfectly in dam of any thickness.

This Rubber Dam Punch is an example of the finest dental instrument that can be produced with modern machinery and skilled workmanship.

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

NEW YORK

LEAMING'S "VULCAN"

CARBORUNDUM

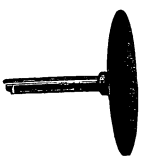
DISKS, WHEELS AND POINTS

These wheels are made by a new process, rendering them very sharp and tough. They are practically unbreakable, and do not become gummed like ordinary corundum. The character of the binding material makes them so tough as to allow of remarkable thinness all the way through to the mandrel, thus rendering their use possible in places inaccessible with the old-fashioned wheels. Many operators use them as a substitute for the diamond, as they readily cut the enamel; and they can be used for preparing cavities in porcelain teeth.

Each wheel is trued and securely mounted on plain mandrel for the dental engine while in the mould, and is guaranteed to run absolutely true.

The Vulcan Disks and Thin Wheels can be had "Safe-sided" if desired; and will be furnished either side smooth, as called for.

Order by number.



NO. 480.

Attention is particularly called to No. 480. It is very thin and flexible, but tough, and will bear a hard push edgewise. Intended for separating and polishing.

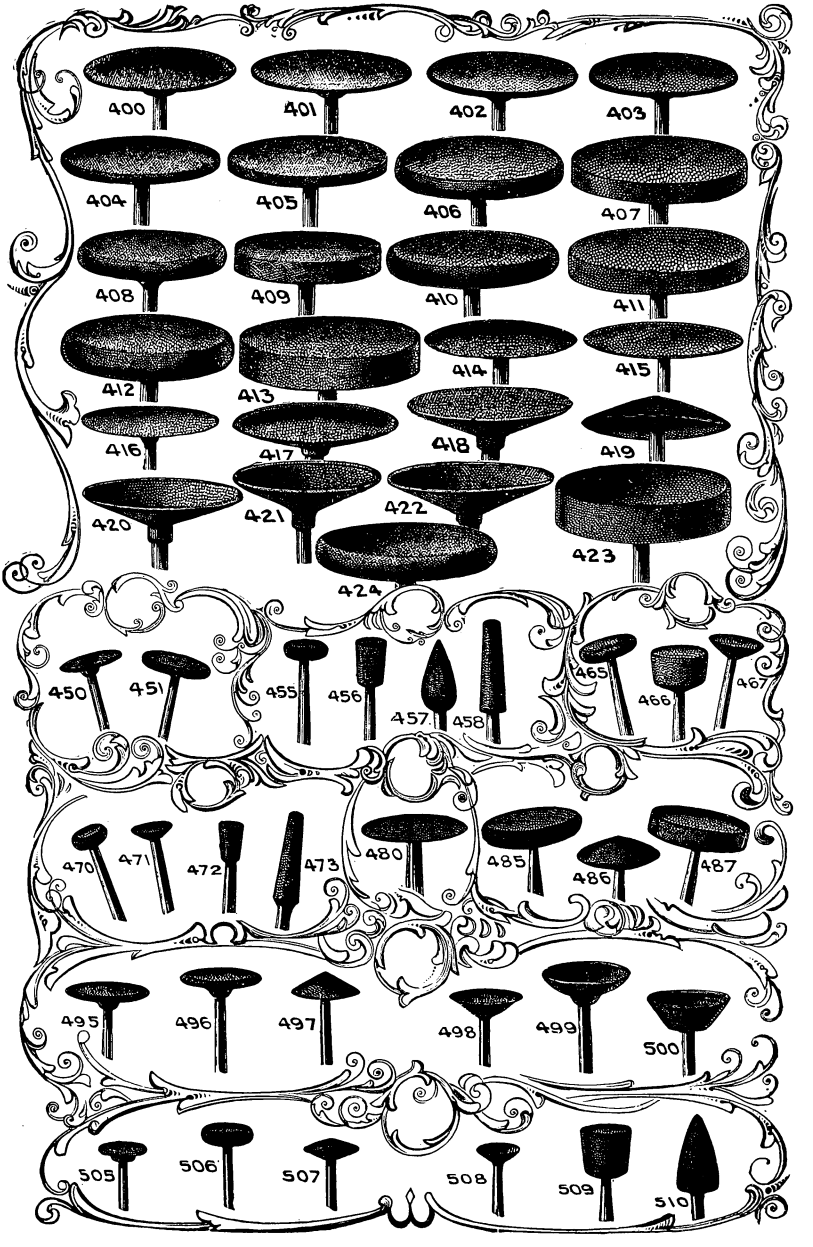
PRICE, PER DOZEN, - - $2.50
PRICE, EACH, - - - - .25

FOR SALE AT ALL LEADING DENTAL DEPOTS

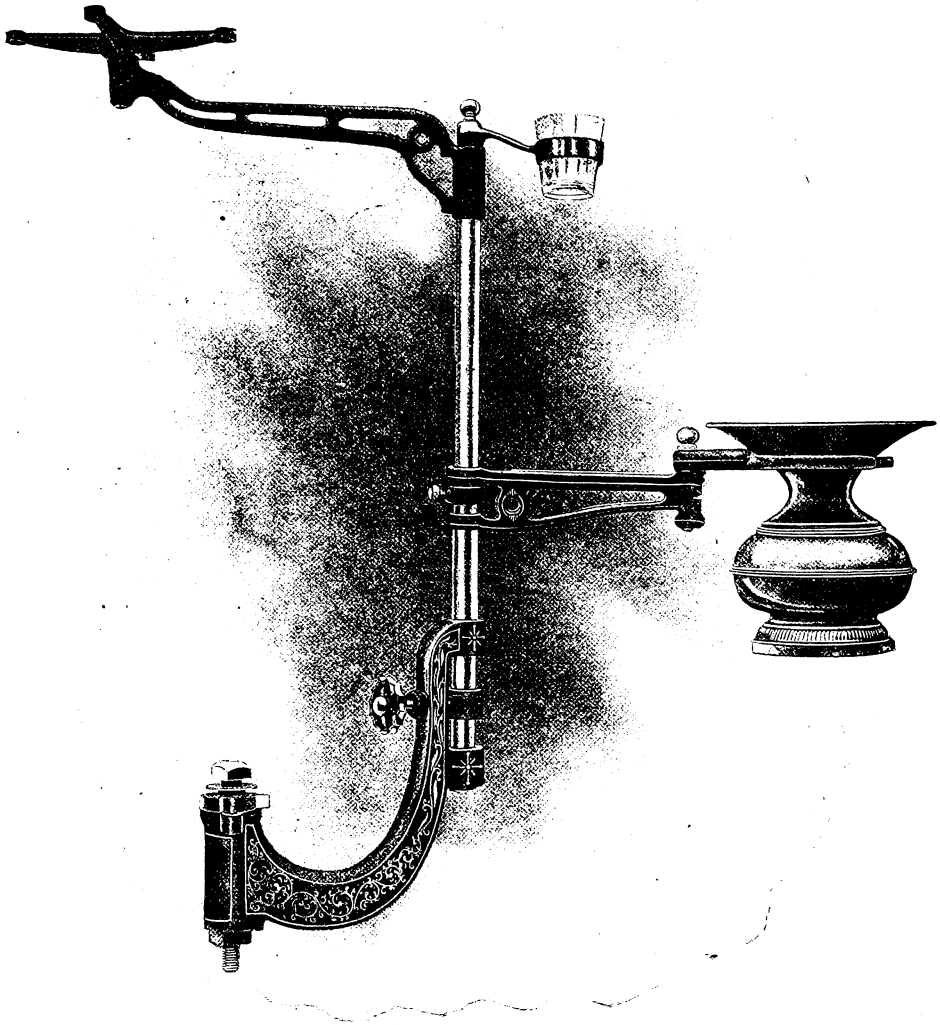
CONSOLIDATED DENTAL MFG. CO.

NEW YORK

LEAMING'S "VULCAN"
CARBORUNDUM
DISKS, WHEELS AND POINTS



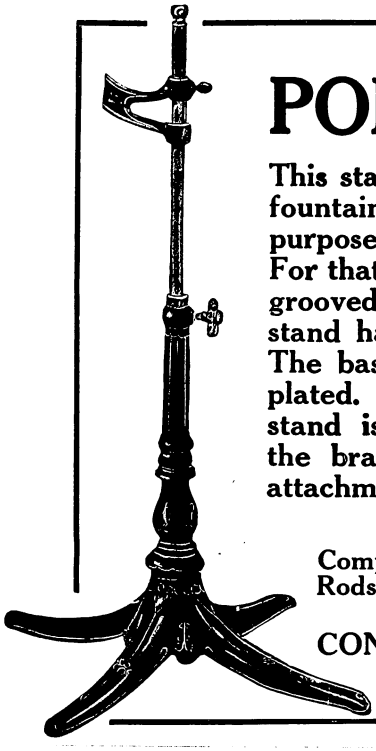
CONSOLIDATED COMBINATION DENTAL CHAIR ATTACHMENT



THE illustration shows the several parts which make up this combination attachment. The table and cuspidor arms swing all the way around. The cuspidor arm can be raised or lowered and held by a thumb screw at any height. The post itself can be adjusted vertically as high or low as desired. It is fastened by a screw and collar clamp which does not mar the surface of the post. The supporting bracket is attached under the seat of the chair and the whole swings in a semi-circle. A stop prevents its swinging against the chair. The table arm is 12 inches long and irrespective of the position of the patient, the table can always be placed within convenient proximity.

PRICES

Combination Attachment, complete with Style A Cuspidor	$14.50
Combination Attachment, with Style B Cuspidor	16.00
Combination Attachment, complete less Glass Holder, Cuspidor, Holder and Arm	8.75
Cuspidor Arm and Holder	3.50
Cuspidor, Style A $1.50 Cuspidor, Style B	3.00



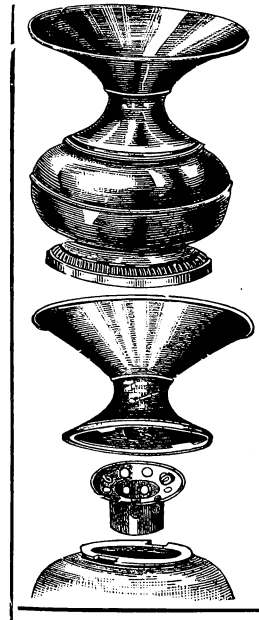
PORTABLE STAND

This stand is commonly used for supporting the fountain spittoon. It is also used for the same purpose as the Combination Chair Attachment. For that purpose we furnish a special upright rod grooved to hold the bracket table arm. This stand has an ample base and is perfectly rigid. The base is Japanned and uprights are nickel-plated. Full height, 43 inches. Specify whether stand is to be used for holding spittoon or for the bracket table arm and other combination-attachment parts.

PRICE

Complete	$8.00
Rods, separately, each	1.75

CONSOLIDATED DENTAL MFG. CO.
NEW YORK



CUSPIDOR

With Agate Cup

This cuspidor is fitted with a large agate enamel cup which rests on the shoulder of the bowl. This cup is non-corrosive and easily cleansed and sterilized. It forms an antiseptic lining for the cuspidor. Excretions do not adhere to it and there is consequently no odor. Without this cup the cuspidor cannot be kept antiseptically clean. The perforated gold catcher fits inside the agate cup. All parts are easily removed for cleansing. When closed the shoulder joint is absolutely tight. Made of spun brass and heavily nickel plated.

Price, $3.00

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.
NEW YORK

DESENSITOR

AN efficient, reliable and harmless anesthetic composed of Hamamelis, Alcohol, Iodoform and 1% Cocaine.

Upon its injection it desensitizes the tissues at once. It never fails. It is always safe. It does not cause sloughing of the gums. The ingredients favor the prompt healing of a wound. There are no toxical effects.

DESENSITOR is an assistant, not an obstacle, and there is no other local anesthetic with which a dentist can work so confidently. Price $1.00 per ounce, $5.00 per six ounces.

Consolidated Dental Mfg. Co.

NEW YORK

An Eminent Authority

states: "Complete anesthesia, because of the dangers and inconveniences it entails, should be the exception in dental surgery. On this fact is based the importance of local anesthesia."

You can avoid unnecessary strain and anxiety by the use of an efficient and reliable local anesthetic.

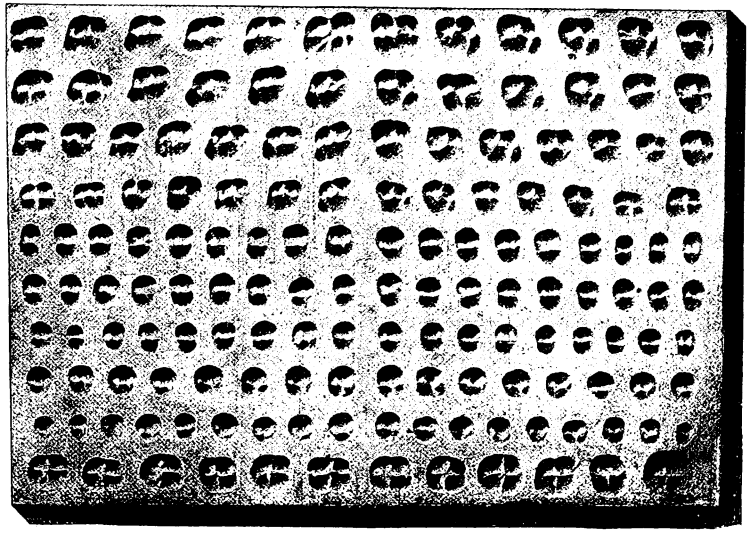
Try

DESENSITOR

Sample bottle sent on request.

Guarantee number 6271, granted under the Pure Food Law.

AJAX DIE PLATE



¶ There are 152 reproductions of natural cusps on this plate. This unusual large assortment in such convenient compact form supplies crown and bridge workers with every desired shape. The arrangement of the cusps is practical and convenient for quick selection and swaging.

Made of hardest and most durable metal obtainable for die plates. Size, 6½ x 4½. Price, $3.00.

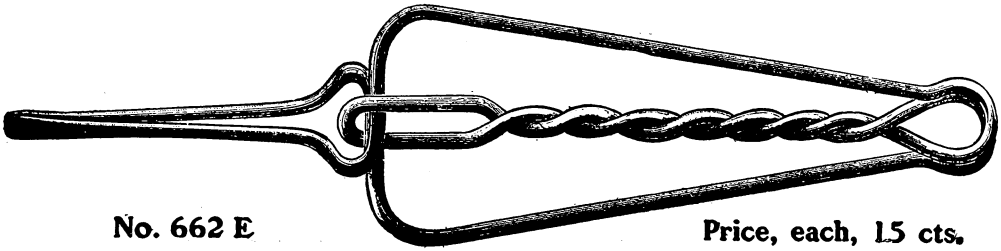
FOR SALE AT ALL THE LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

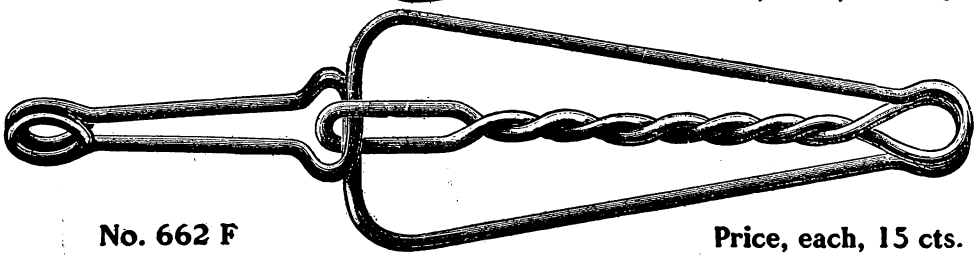
NEW YORK

PHILADELPHIA BOSTON CLEVELAND DETROIT CHICAGO

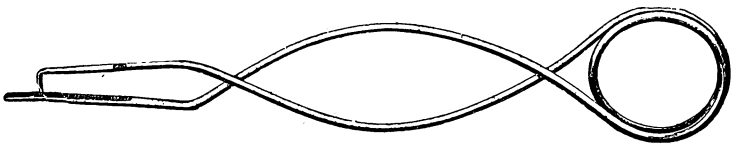
SOLDERING TWEEZERS



No. 662 E **Price, each, 15 cts.**

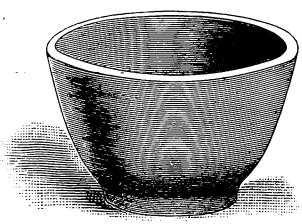


No. 662 F **Price, each, 15 cts.**



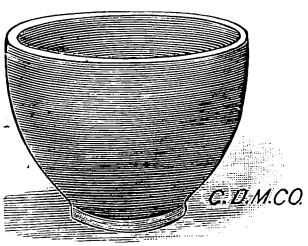
HALF SIZE

No. 662 G. 7¾ inches long. **Price, each, 20 cts.**

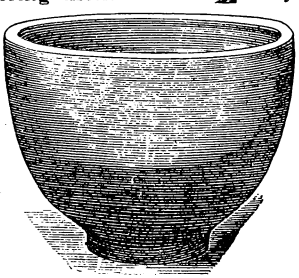


REDUCED PRICES

RUBBER PLASTER BOWLS



Made of fine quality rubber, vulcanized soft, rendering them flexible. They will last for years. The edges can be pressed together to form a lip of desired size for pouring thin-mixed plaster. Plaster having become "set" in the bowls may be removed by squeezing the sides of the bowls. Made in three sizes:



Small, 3¼ in. diameter, 2¼ in. deep,	- -	$ .40
Medium, 4½ in. diameter, 3 in. deep,	- -	.50
Large, 5⅛ in. diameter, 3¾ in. deep,	- -	.70

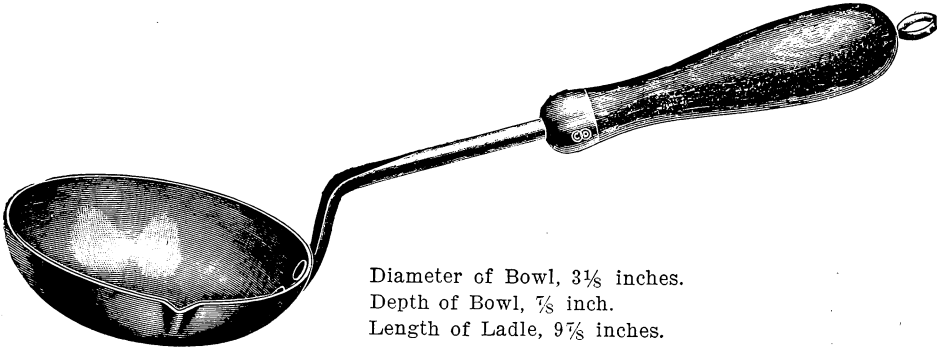
FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

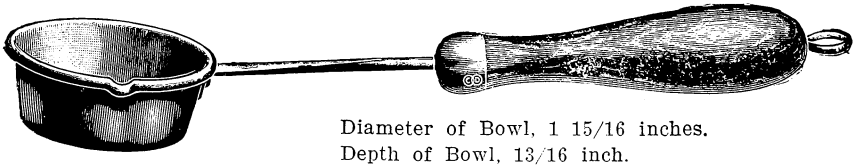
NEW YORK

COPPER MELTING LADLES.

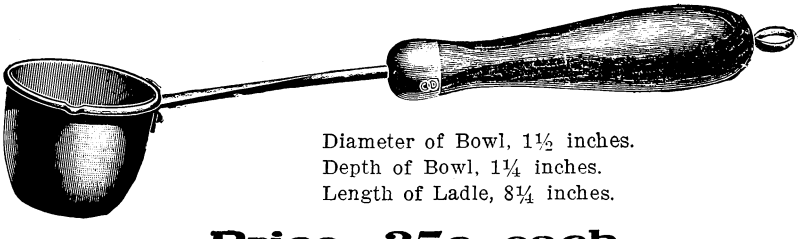
In every respect these new ladles represent improvements over all other makes on the market. The copper is extra heavy, the shanks are neatly finished and nickel dipped, the handles are carefully selected, polished and strongly fitted. Principally, the ladles are correctly and strongly made to withstand the roughest laboratory usage without bending out of shape. Considering workmanship and material, the price is very reasonable.



Diameter of Bowl, 3⅛ inches.
Depth of Bowl, ⅞ inch.
Length of Ladle, 9⅞ inches.



Diameter of Bowl, 1 15/16 inches.
Depth of Bowl, 13/16 inch.
Length of Ladle, 8¾ inches.



Diameter of Bowl, 1½ inches.
Depth of Bowl, 1¼ inches.
Length of Ladle, 8¼ inches.

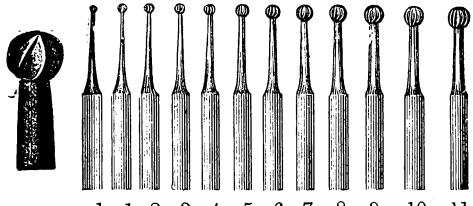
Price, 35c each.

Consolidated Dental Mfg. Co.

REALIZ
BU

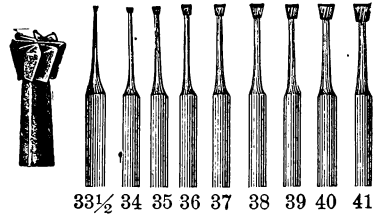
do not grind! The steel is specially razor edges in the hardest cutting. The the proper angle to shave dentin smoothly obviate the distress which patients suffer

ROUND



½ 1 2 3 4 5 6 7 8 9 10 11

INVERTED CONE



33½ 34 35 36 37 38 39 40 41

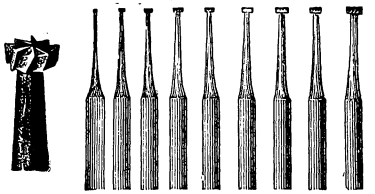
REALIZATION BURS are made by machine. No others approach them in the accurate angle of the blades; the razor edges are in the exact circumference of a circle and equally distant from each other. The fine hard quality of the steel produces a sustaining cutting edge, preserved by the high temper. Such accuracy and perfection is not feasible in the making of Burs by hand. No human eye can accurately measure the dimensions of so small an instrument and quality must necessarily suffer in the expense of such tedious operation.

The shanks are perfectly true and fit accurately in the handpiece, saving much wear and tear on that instrument.

A T I O N
R S

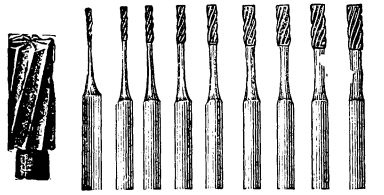
tempered to a degree that maintains the blades are accurately and uniformly cut at and quickly. Their cutting properties from dull, irregular and grinding burs.

WHEEL



11½ 12 13 14 15 16 17 18 19

SQUARE END FISSURE



55½ 56 57 58 59 60 61 62 63

We supply No. 00 of each style as well as those illustrated; ½ dozen of a size in a package.

PRICES

Nos. ½ to 8; 11 ½ to 19; 33½ to 41; 55½ to 63, per dozen, -	**$1.00**
Half-Gross, - - - -	**5.50**
Gross, - - - -	**10.00**

Nos. 9, 10, 11, each 15 cts.; per doz., $1.50, per half gross, $8.00

We supply the numbers shown in cut, for Davis and No. 2 Right Angle, as well as for C. D. M. Co. Universal and No. 7 Handpieces.

To buy a gross of such a first class Bur as the Realization is a profitable investment, as you save $2.00, the difference between gross price and dozen price. With an additional discount of 3 per cent. for cash with order, a total saving of about 20 per cent. is thus effected. You can't do better.

FOR SALE AT ALL LEADING DENTAL DEPOTS

Consolidated Dental Mfg. Co.

NEW YORK

WAX

GUTTA PERCHA AND WAX.

For Base Plates, Bites and Impressions.

This wax contains a generous portion of pure gutta-percha, giving it the excellent quality for which it is noted. Pure gutta-percha is very expensive, but when you buy C. D. M. Co. wax you are protected against scanty proportions and adulterations.

Put up in ½-lb. boxes. Price, $1.00 per lb.; 50 cents per box.

Extra Tough Pink Paraffin and Wax.

For Trial Plates.

Many brands of Pink Wax are rendered brittle by the incorporation of coloring material. This is not true of our wax. It is, in fact, as tough as our Yellow Wax, notwithstanding its rich pink shade. Put up, same size sheets and boxes as Yellow Wax. Price, per lb., $1.00; 50 cents a box.

YELLOW PARAFFIN AND WAX.

For Base Plates, Bites and Impressions.

Contains just the right proportions of paraffin and pure beeswax; is extremely tough and liked by all who use it. Made in sheets 5⅛ in. by 2¾ in. Put up in ½-lb. boxes; $1.00 per lb.; 50 cents a box.

STICKY WAX.

For putting Impressions together, Mending Plaster Casts, Sticking Teeth to the Plate, especially Metal Work.

For attaching the porcelain to the gold in crown and bridge work, repairing plaster casts, etc., etc.

This wax is in the form of round sticks of convenient size and form for the purpose intended. Price, per box, 50 cents. In new style round metal package, price, 25 cents.

CONSOLIDATED DENTAL MFG. CO.

Consolidated Bone Spatula

Selected Bone
Nicely Finished
Practical Shape
Ample Strength
Price 25 Cents

Consolidated
Dental
Mfg.
Co.
New York

A little inattention to details has often proved costly. Your purchases of little things may have a big story to tell in your important work. For instance, you KNOW, but you may fail to REMEMBER, that ordinary mercury will spoil the working qualities of the best alloy that ever was made.

CHEMICALLY PURE MERCURY

should be written out IN FULL on your memo. of things to purchase. It is impossible to obtain desirable results with Mercury in Dental work, unless the carefully purified and redistilled article is used. Impurities cannot be detected by the Dentist until it is too late, and cheap, spurious Mercury can easily be substituted by the Dealer. The absolutely pure article is to be found in our sealed cones, and you should insist on getting it —a better one you cannot get. Look at the label for our name.

In Sealed Cones, 4 oz., 50c. Each.

Consolidated Dental Mfg. Co.
NEW YORK
Philadelphia Boston Detroit
Cleveland Chicago

Prices of Consolidated Porcelain Teeth

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

		Retail	$25.00 Lots.	$50.00 Lots.	$100.00 Lots.
Plain Teeth for Rubber Work Gum " " " " Saddle-Back " " " Gum Plate Teeth for Metal Work—Short Pins Plate Bicuspids and Molars—Short Pins	Per Tooth	$0.20	$0.19	$0.18	$0.16
Flat Back Teeth (Facings) for Crown and Bridge Work Saddle-Back Teeth for Crown and Bridge Work Gum Plate Teeth for Metal Work—Long Pins Plate Bicuspids and Molars for Metal Work—Long Pins *Continuous Gum Teeth (Without Roots)	Per Tooth	.25	.23	.22	.20
Pinless Bicuspids and Molars, sold in 4's or 8's only	Per Tooth	.05	.04½	.04¼	.04
Combination Sets of (8) Pinless Bicuspids and Molars with (6) Platinum Pin Incisors and Canines	Per Set	1.60	1.50	1.42	1.28
Davis Crowns	Per Crown	.40	.....	.....	.....
Davis Crowns, without Pin		.35	.....	.....	.....
Davis Crowns	Per case of 100 Crowns	35.00	.....	.....	.....
METALITE Teeth The famous Consolidated Porcelain with METALITE Pins.	1 x 14	1.00	.....	.....	.....
	11 x 14	10.00	.....	.....	.....
	28 x 14	25.00	.....	.....	.....
	58 x 14	50.00	.....	.....	.....
	120 x 14	100.00	.....	.....	.....
Gum **METALITE** Teeth	"	"	.....	.....	.....

The price of our teeth is regulated by the amount of platinum used in each tooth; thus, all long pin teeth are 25 cents each, and short pin teeth 20 cents each.

*Continuous gum teeth are made in all our regular Plain Teeth Molds, as illustrated on pages 27 to 49, of our tooth catalogue, each tooth having a strong, deep-set iridio-platinum pin. These differ from regular continuous gum teeth in that they have no porcelain root.

MISCELLANEOUS

Colored Teeth for Exhibition, in sets of 14, White, Red, Blue, Green, Yellow or Brown	Per Tooth, $0.30 each
Miniature Sets	.50 "
Miniature Sets, Unmounted	1.00 "
Giant Teeth, The "Monarch"	.50 "
Davis Crown Pins	.05 "
" " " Split	.10 "
Shade Ring	1.00 "
Crown Root Reamer	.60 "

The retail prices apply on the respective classes of teeth, when sold in partial or full sets, as well as singly.

Quantity rates will be given on purchases of mixed lots, as well as on lots of one class.

Above prices are subject to following discounts for spot cash:

3% on amounts from $5.00 to $25.00.
5% on amounts from $25.00 to $100.00.
10% on amounts of $100.00 and over.

CONSOLIDATED DENTAL MFG. CO.

130 WASHINGTON PLACE, NEW YORK

METALITE
PORCELAIN TEETH

(The famous Consolidated Tooth Body with **METALITE** pins.)

In introducing **METALITE** teeth to the dental profession, we present the genuine Consolidated Porcelain Tooth with **METALITE** pins, by the incorporation of which we are able to reduce the price to

$1.00 PER SET of 14 Plain Teeth.

The dense structure, lifelike translucency, delicately blended colors. practical molds and other excellent properties which have made Consolidated teeth famous, likewise establish beyond question the superiority of **METALITE** teeth. No stronger claim for their perfection can be made than the unrivaled qualities of their body and enamel, identical with that in Consolidated platinum pin teeth and no better augury of reliability can be offered than the confidence which the dental profession has placed in it.

Sold in sets of 14's and 28's only.

PRICES

1 set of 14 teeth - - -	$ 1.00
11 sets of 14 teeth - - -	10.00
28 sets of 14 teeth - - -	25.00
58 sets of 14 teeth - - -	50.00
120 sets of 14 teeth - - -	100.00

The above prices are subject to the usual discounts for cash.

METALITE
PORCELAIN TEETH

(The famous Consolidated Tooth Body with **METALITE** pins.)

METALITE pins are made and baked (not soldered) into the tooth by exactly the same process we use to make all our other pin teeth. Their tensile strength will resist a far greater strain than is ever exerted in the human mouth. In baking our teeth to produce the highest fusing porcelain on the market, they are subjected to an intense heat and the material in our pins is specially made of an alloy of metals to withstand such great heat and produce a pin of great tensile strength, temper and other essential properties, characteristic of a successful artificial-tooth-pin. The range of adaptability and application of **METALITE** teeth is therefore not limited, and vulcanite plate-workers can rely on the strength and stability of **METALITE** teeth in the most exacting cases.

Sold in sets of 14's and 28's only.

For selecting **METALITE** teeth use our catalog of Porcelain Teeth and Davis Crowns, in which a large and complete assortment of molds is illustrated on pages 28 to 34.

Copy of catalog sent postpaid on application.

Consolidated CD Dental Mfg. Co.

NEW YORK, N. Y., U. S. A.

BRANCHES

BOSTON CHICAGO CLEVELAND DETROIT NEW YORK PHILADELPHIA

R. S. WILLIAMS

The name and the mark have been established for over a third of a century and are accepted throughout the dental world as the best assurance of extreme purity in gold.

R. S. Williams' gold is prepared in many forms,—all specialties and unexcelled for good working qualities.

For sale at leading Dental Depots everywhere.


R. S. WILLIAMS'
STANDARD GOLD SOLDER
CONSOLIDATED DENTAL MFG. CO.
NEW YORK, U.S.A.
UNTRIMMED
R. S. WILLIAMS'
STANDARD
RS
GOLD FOIL,
Consolidated Dental Mfg. Co.
NEW YORK, N.Y.
CRESCENT
STANDARD CD GOLD
Specially Prepared for Low Fusing Porcelain Inlay Work
CRESCENT
GOLD CYLINDERS
R. S. WILLIAMS'
STANDARD
FINENESS
QUALITY
GOLD.
CONSOLIDATED DENTAL MFG. CO.
NEW YORK U.S.A.
NO. 4
R. S. WILLIAMS'
STANDARD GOLD SOLDER
CONSOLIDATED DENTAL MFG. CO.
NEW YORK, U.S.A.

Crescent Alloy

This alloy is prepared scientifically to produce conditions most desirable in an alloy. Its ingredients are pure and its working qualities perfect. It is very strong, with ample edge strength, and its density will resist all the strain of mastication. It sets moderately, allowing sufficient opportunity for manipulation. There is absolutely no shrinkage. Its purity is absolute guard against discoloration of the teeth. The use of Crescent Alloy insures a permanent filling and a guarantee of satisfactory work.

Prices:—$1.50 per oz., 5 ozs. $7.00, 10 ozs. $13.50, in shavings and filings. Put up also in five ounce glass stoppered bottles.

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

NEW YORK

CONSOLIDATED HANDPIECE

THE striking and long troublesome defects which have heretofore pronounced the shortcomings of the Universal Handpiece, viz., the sectional and loose-jointed spindle, the insecure bur chuck and the exposed oil-covered and dirt-collecting section of the spindle coming in contact with the operator's hand, have been entirely eliminated in this new model.

In the Consolidated Model the entire length of the spindle is in one piece, forming a continuous rigid shaft with broad end-bearings. The effect is that of a long bearing in which there is no vibration and no lateral wabbling of the bur.

A very important advantage is the provision which automatically takes up the wear, both that of the bur shanks and in the handpiece parts. Even though the wear is infinitesimal or the opposite variation as much as one-sixty-fourth of an inch, the chuck adjusts itself automatically to take it up. The claim made for other handpieces is that they will take any shank of the standard size. The deficiency of this limited range is at once demonstrated not only by the variation in the gauges of bur shanks made by dental manufacturers, but by the wear always resulting from constant use.

By loosening a single screw, No. 7, the entire case can be removed and the running parts oiled through a single hole. The entire spindle is enclosed, no oil-covered parts are exposed and leakage of oil is prevented.

Watch-work best expresses the character of its construction. Noiseless light running and durability are guaranteed. It is the product of ingenious ideas and skilled mechanical workmanship; for practical use a more serviceable handpiece has not been devised.

CONSOLIDATED HANDPIECE

ONE PIECE SPINDLE

No Oil Covered Sections Exposed. Automatic Locking Chuck for Shanks of Various Gauges.

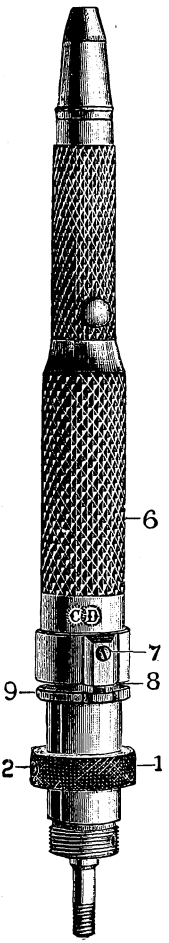


Fig. 1

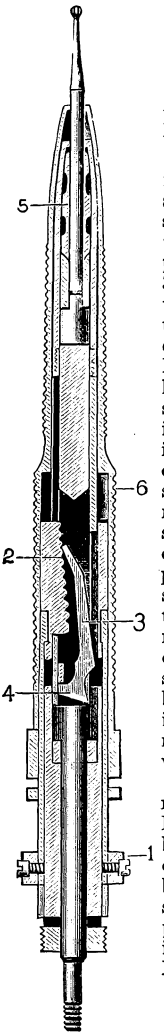


Fig. 2

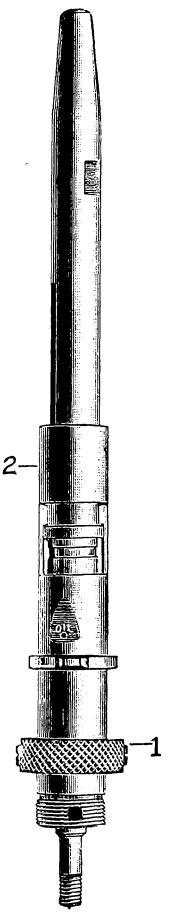
OPERATION

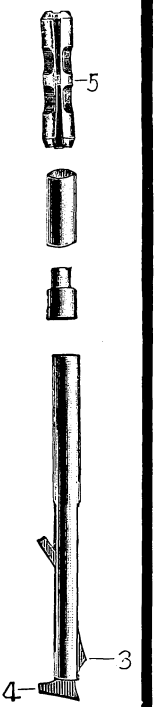
The bur is locked in the handpiece by simply pushing the slide, No. 1, upward.

The operation involved is illustrated in the cross-section, figure 2. When the slide, No. 1, is pushed upward, the ratchet, No. 2, is pushed against the dog, No. 3, which acts as a lever. Its toe, No. 4, moves upward, transmitting the leverage directly against the chuck No. 5, which closes as it rises higher into the diminishing space between the converging walls of the nose. The intense pressure against the chuck clamps it on the bur shank which thus becomes a rigid projection of the spindle. The pressure is evenly distributed on all parts of the chuck. The standard size shank can be tightly locked when the ratchet, No. 2, is pushed up only one step. Shanks of smaller diameter are locked by advancing it further and it will be seen that the ample range provides for shanks of various diameters.

The case, No. 6, can be removed by loosening screw No. 7. To take up wear between the spindle and the case, turn screw No. 8, to bring the case closer to the shoulder, No. 9. The handpiece is oiled through a hole in the spindle directly under No. 7.

PRICE $7.00

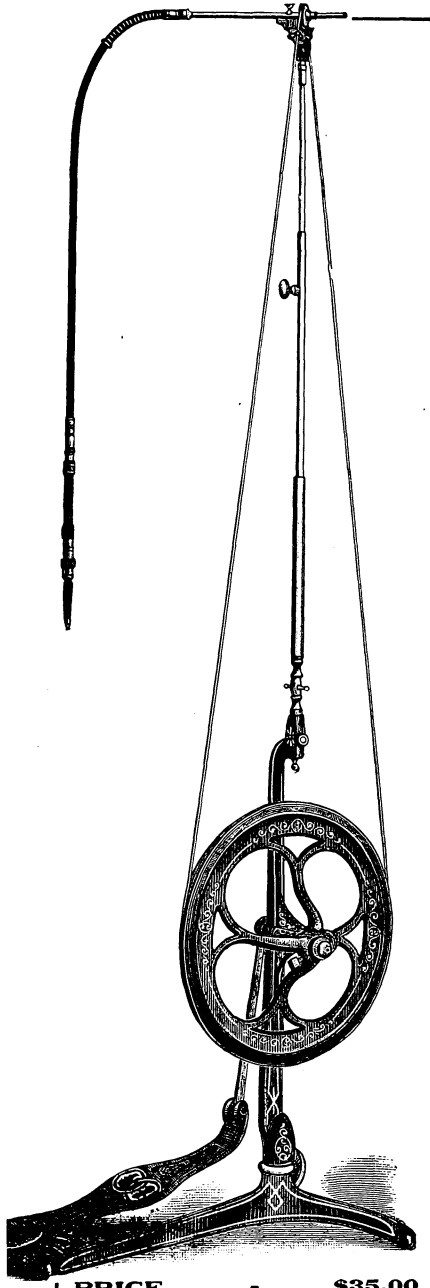




FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED C&D DENTAL MFG. CO.

NEW YORK



THE NEW CONSOLIDATED ENGINE

The distinctive feature of this engine is the trueness of the wheel and the precision of the bearings. Particular attention has been paid toward balancing its weight to prevent the "throwing" or increased momentum of the engine. Wheels with overweighted sections counteract the effect of the finest treadle-springs and produce the "jerky" engine, with erratic action especially troublesome in delicate work when running the engine slowly. The wheel runs absolutely true without the least perceptible variation, in contrast to the "wobbling" wheels of many engines. By an accurate adjustment of a finely tempered treadle-spring the wheel is never allowed to stop on the dead center. It will never start backward; mere pressure on the treadle causes one complete revolution, the greater part of which is assisted by the power of the spring.

The unvarying speed of our engine is the result of the mathematical adjustment of the weights to the load. This accuracy of construction has resulted in the lightest-running engine ever offered to the dental profession. Many who have seen it remark that it runs like a ball-bearing machine. It is perfectly noiseless.

The upright is made in two pieces which telescope and are fastened by a set screw; thereby the stretch in the engine-cord can be taken up.

The weight has been considerably reduced to facilitate the moving of the engine, but the base is ample and as rigid as the heavier styles.

Efficiency and durability are assured by the simplicity of its construction; strength of its parts and the fineness and accuracy of its manufacture. It is handsomely finished, the base being japanned and ornamented and the upright and head nickel-plated.

The cable, pulley-head, sheath, duplex spring connection, arm support, etc., are of the latest and most approved pattern and nothing but the best materials and workmanship enter into their construction.

A No. 7 or New Consolidated Handpiece and complete equipment is supplied with the engine.

PRICE, - $35.00

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

NEW YORK

IMPROVED SUPERIOR DENTAL RUBBER.

IN placing this ***improved*** rubber before the dental profession we offer an article which is decidedly superior in all essential qualities, embodies more desirable features and insures better results than the vulcanite rubber heretofore sold to the dental profession.

With the object of producing the best rubber for dental work, every detail, such as finish, density, porosity, color, weight, strength, elasticity, rigidity, gas generation, chemical changes, expansion, contraction, and all other minute phenomena in vulcanization have been carefully studied. Our rubber consequently has the largest percentage of good qualities. No trouble or failure will ever result when used with reasonable care.

Full Weight Exclusive of Linen is Guaranteed.

When buying our rubber, purchasers are protected against the common practice of including the linen in the weight and charging for it as rubber. Superior Dental Rubber is put up in strong half pound cartons, containing explicit directions and time required for vulcanization.

		Per. lb.	5 lb. Lots	10 lb. Lots	25 lb. Lots
No. 1.	Light Orange	$2.50	$2.30	$2.20	$2.10
" 2.	Medium Orange	2.50	2.30	2.20	2.10
" 3.	Dark Orange	2.50	2.30	2.20	2.10
" 4.	Mottled Light Red	2.50	2.30	2.20	2.10
" 5.	Mottled Dark Red	2.50	2.30	2.20	2.10
" 6.	Maroon	2.75	2.50	2.40	2.30
" 7.	Jet Black	2.75	2.50	2.40	2.30
" 8.	Olive Black	3.50	3.20	3.00	2.80
" 9.	Pink	5.00	4.50	.....	.....
" 12.	Weighted Brown	4.00	3.70	3.50	3.30
	Perfection Pink	6.00	5.00	.....	.....

Perfection Pink is put up in ½-lb. and ¼-lb. packages; all other rubbers in ½-lb. packages only.

Quantity rates will be given on purchases of an assorted lot.

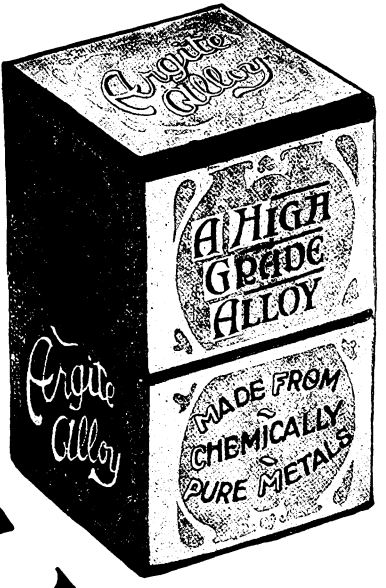
The above prices are subject to the regular discounts for cash.

Consolidated Dental Mfg. Co.

New York

ARGITE ALLOY

Rich in Silver



Quick Setting

Put up in Shavings or Filings

ITS beautiful silver-white color is a distinct "Argite" quality. It holds its color permanently in the mouth, and is proof against disintegration by the oral fluids. Another distinct "Argite" quality is the strength at the margins and thin edges of fillings made with it. There is no contraction and the tendency is toward minute expansion, insuring tight fillings.

PRICE

1 Ounce	$2.50	5 Ounce	$10.00
2 "	4.50	10 "	19.00

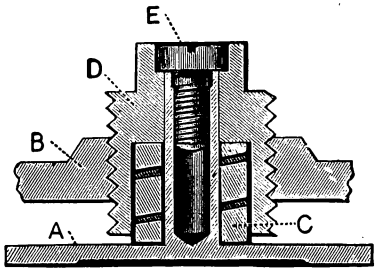
FOR SALE AT ALL LEADING DENTAL DEPOTS

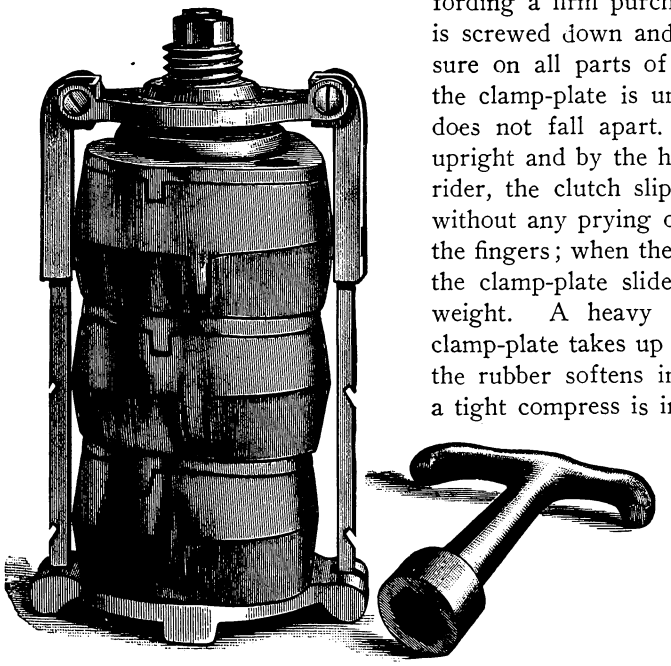
CONSOLIDATED DENTAL MFG. CO.

NEW YORK

The Consolidated Donham Flask-Press

(Patented Jan. 27, 1907)





The illustration shows how this flask-press can be adjusted to take either one, two or three flasks. Pieces of pipe heretofore required on the rigid frame Donham Flask-Press are dispensed with. The clamp-plate slides up and down on the frame bars; a clutch in the rider grips the notches in the frame bars, affording a firm purchase when the plate is screwed down and insures even pressure on all parts of the flasks. When the clamp-plate is unscrewed the frame does not fall apart. The bars remain upright and by the hinged action of the rider, the clutch slips out of the notch without any prying or handling to burn the fingers; when the flasks are removed the clamp-plate slides down by its own weight. A heavy spring "C" in the clamp-plate takes up the shrinkage when the rubber softens in the flasks. Thus a tight compress is insured even though the cases and flasks shrink to the improbable extent of one-quarter of an inch. The clamp-plate, riders and spring are made of tempered steel. All the other parts are of solid brass—nickel dipped. A long hook for lifting it from the vulcanizer is furnished with each press. This press is simple, strong, of very small bulk and unusually easy to adjust.

Price complete, without Flasks, $3.50

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED DENTAL MFG. CO.

NEW YORK

LISTERINE TOOTH POWDER

A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many who have used it during this entire period, that Listerine is the best antiseptic for daily employment in the care and preservation of the teeth. Listerine Tooth Powder, then, is not intended to supplant Listerine in the daily toilet of the teeth, but is offered in response to a popular demand for a frictionary dentifrice to be used in conjunction with this well-known and time-tried antiseptic.

Listerine Tooth Powder is composed of precipitated carbonate of calcium, carbonate of magnesium, oil of cananga, and the antiseptic constituents of Listerine.

The simplicity of its formula, in itself commends the powder. The English precipitated chalk and magnesia are the finest obtainable, and absolutely free from grit; the oil of cananga possesses properties opposed to inflammatory conditions of the gums, and together with the antiseptic constituents of Listerine, adds to the desirable qualities of the product. However, it is to the list of articles which have been omitted from the formula that special attention is directed, and the manufacturers believe the profession will agree that the absence of pumice stone, cuttlefish bone or other abrasive substances, and of sugar, orris root or superficial perfume of any character (the usual ingredients of tooth powders and liable in themselves to fermentative action in the mouth), is a distinct advantage.

Lambert Pharmacal Co.

St. Louis, U. S. A.

EXCHANGES EXCHANGES

NOTE.—Rate for advertising in this department of ITEMS OF INTEREST is ten cents per word including captions, "Wanted," "For Sale," "Exchanges," etc., and address. Initials charged as words. Rate for agency advertisements is twenty cents per word. Advertisements should reach us by the 15th of the month to insure insertion in the following month's issue, and are payable in advance.
CONSOLIDATED DENTAL MFG. CO., Publishers, 130 Washington Place, New York, N. Y.

5130—FOR SALE—Finest equipped dental office in State of New Jersey; population 110,000. Will sell for $4000. Address "No. 5130," care "Items of Interest," No. 130 Washington Place, New York

5131—FOR SALE—Twenty-five shares Sanitol stock issued before recapitalization. BISCHOFF, Stevens Point, Wis.

5132—FOR SALE—Advertising office; money maker. "DENTIST," No. 2529 Loraine Avenue, Cleveland, Ohio.

5133—FOR SALE—$2000 practice in Northern Florida; fine seaport and shipping center. Snap for $500 cash, including office furniture, instruments, etc. Address "FLORIDA," care "Items of Interest." No. 130 Washington Place, New York.

5134—SITUATION WANTED—In Greater New York by an all around man who is a top-notcher in up-to-date crown and bridge work and is thoroughly familiar with porcelain. Age 30. Nine years' experience. No hurry. Expect $40 per week. Address "No. 5134," care "Items of Interest," No. 130 Washington Place, New York.

5135—FOR SALE—$1800 practice, with or without outfit, in central Kentucky town of 1200, established nine years. Cinch for right party. Satisfactory reasons given for selling. Address LOUISVILLE DENTAL DEPOT, No. 561-563 Third Avenue, Louisville, Ky.

5136 — WANTED — Dentist; operative work only. Good salary and permanent position guaranteed. Must be registered in New Jersey. Address in confidence. "THOMAS," care Consolidated Dental Mfg. Co., Phila.

5137—FOR SALE—$3000 cash practice at cost of outfit and inventory, will not exceed $400. Reason, failing health. Address C. A. FLEMING, Browning, Mo.

5138 — FOR SALE — Private practice, twenty-five miles from New York; best location; good business. Office equipped latest improvements. Address "E.," care "Items of Interest," No. 130 Washington Place, New York.

5139—FOR SALE—Advertising practice of $8000 yearly. Established five years in a growing Massachusetts city of 75,000. Equipment up to date. Price $2000. Terms easy. Address "COHICK," No. 231 West 127th Street, New York City.

5140—FOR SALE—Established practice, modern equipment; fine location; city 25,000, eastern Indiana. Reason, change of business. Address "No. 5140," care "Items of Interest," No. 130 Washington Place, New York.

5141—WANTED—Situation in Pennsylvania. Careful, thorough operator, crown and bridge worker. Porcelain inlays. Expert Somnoform anaethetist. Address "W. S.," care "Items of Interest," No. 130 Washington Place, New York.

5142—WANTED—To buy an ethical practice above 34th Street, New York City. State full particulars. Address "CASH BUYER," care "Items of Interest," No. 130 Washington Place, New York.

5143—FOR SALE—A $2500 practice in northeastern South Dakota. Snap. Particulars, address "CLYDE," care "Items of Interest," No. 130 Washington Place, New York.

5144—WANTED—By honest, experienced, reliable dentist, January 1, 1908, a position as operator, manager or to rent established office. Address "A. G.," care of "Items of Interest," No. 130 Washington Place, New York.

5145—Young man of ability, graduate '04, with some following, desires operating room, furnished or unfurnished, in conjunction with first class dentist who can turn over operating or mechanical work sufficient to pay for same. Highest references. "E. R. S.," Box 5313, Boston.

5146—FOR SALE—Practice in wealthy residential district, block from two 300-room hotels. Exclusive lease, with living-rooms. Rent low. No other dentist near. Exceptional opportunity. Address "DENTIST," Hyde Park Hotel, Chicago.

5147—FOR SALE—Old established practice and office outfit for $500 less than invoice price, in a county seat of 3000 in northwestern Ohio. One other dentist in town, and but four in county. County has a population of 32,000. Best and largest town in county. Best of farming country. Gas, electricity and water works. Most up-to-date office in county. Will bear closest investigation. Reason for selling, expect an appointment in the U. S. Army as a dental surgeon within a short while. Must sell soon. For information address "STUDENT," care "Items of Interest," No. 130 Washington Place, New York.

5148—FOR SALE—$3000 practice. Good Missouri town, 5000. Office elegantly equipped. Established fifteen years. Address "MISSOURI," care Consolidated Dental Mfg. Co., Chicago.

5149—Sacrifice, practice and outfit, Michigan town, 2500. Expenses very light. Going West. Address "F. L. R.," Niles, Michigan.

5150—Practice and outfit, one of the best towns in New York State. Established fifteen years. Fine opportunity for the right man. Address "DENTIST," care of Johnson & Lund, Rochester. N. Y.

5151—FOR SALE—$1500 cash buys $5200 cash practice. Don't answer unless you mean business. Address "SICK," care of "Items of Interest," No. 130 Washington Place, New York.

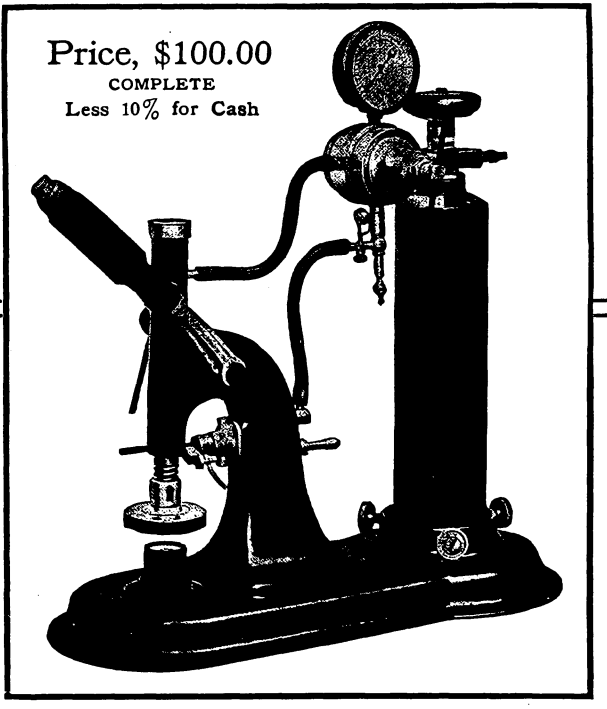
5152—WANTED—Dentist will purchase or accept good position February 1. Address "EXPERIENCED," care of "Items of Interest," No. 130 Washington Place, New York.

5153—WANTED—Operator and bridge worker would accept position where high class work is essential. Salary must be sufficient to compensate for expert services. Address "INLAY," care of "Items of Interest," No. 130 Washington Place, New York.

5154—POSITION—By A 1 all around workman. Extractor, anesthetist, nine years' experience; Iowa, Illinois, California, Wisconsin or Montana. Per cent. or salary. Single and sober. Address "EXTRACTOR," care Consolidated Dental Mfg. Co., Chicago, Ill.

5155—FOR SALE—A fine practice in a manufacturing town of 4500. Only dental office in the town. Established ten years. An exceptional opportunity. M. M. SMITH, Lestershire, N. Y.

THE TAGGART CAST GOLD INLAY



NO one any longer doubts the virtue of the cast inlay. It constitutes a new era in dentistry. The results are as perfect as the most perfect mechanics can make them. But to have perfection in mechanics you must have perfection in mechanism, and this you secure only in the TAGGART MACHINE. When you have tried the numerous spurious and imperfect imitations, come back to the real fountain head of the process and get a TAGGART. Then you will know what perfection means. Order through your dealer.

A very superior carving wax which can be held in the fingers and carved with no danger of marring the finest margins will be sent with each outfit, also an investment material which has no rival for this special work.

THE TAGGART CAST INLAY CO.

551 West 42d Street, New York City

Dentists as Judges

WITHOUT question there is a demand for a good dentifrice. **DENTACURA** Tooth Paste fills the demand. ¶ Thousands of dentists have examined **DENTACURA** in the laboratory as to its germicidal power, or in practice with a view to determining its availability not alone as a delightful dentifrice but also as a curative and prophylactic agent. They pronounce it superior—the best.

¶ We hold testimonials of learned and careful members of the profession in large number stating that **DENTACURA** is, as claimed, a distinct advance in the combination of antiseptics and prophylactics, powerful enough to protect the mouth, but without the slightest injury to the hard or soft tissues of the oral cavity.

¶ We rest the case here.

¶ We would be pleased to have you try it.

¶ Samples freely sent on request.

The DENTACURA COMPANY

NEWARK, NEW JERSEY, U. S. A.

"SEE HOW EASY THEY ARE!"

THE FOLLOWING INCIDENT may be of value to a dentist who is contemplating the purchase of stock in certain dentifrice concerns. All of the facts of this incident are authentic and can be substantiated.

At a recent important dental meeting the SOZODONT representative, a well-known ex-practitioner, was asked to call at the room of a certain official of one of these companies; the object of the invitation was to persuade him to give up his position with Hall & Ruckel and enter the service of this other company. A dentist entered the room just at this time, and after a little persuasion on the part of the official, purchased five (5) shares of stock. When the dentist left the room the official turned to our representative with this remark: "Doctor ———, you can make good for us and sell lots of stock. ***See how easy they are.***"

We want to contrast such methods with the old, well established, ethical, mind-your-own-business methods of the manufacturers of SOZODONT. We solicit your patronage; we are not trying to separate you from your money. It would be a waste of time and space to enlarge upon the well known merits of SOZODONT, famed throughout the world as the greatest American Dentifrice, and a standard preparation of international reputation.

TRANSLUX

The Artificial Dental Enamel

DIRECTIONS

As this material is highly hydroscopic, both the liquid and powder bottles must be kept securely sealed, save during the instant you are using them.

Use only non-metalic instruments in mixing and applying the cement and finishing the filling.

Have these instruments and the mixing slab dry and perfectly clean.

Prepare the cavity **as for a gold filling,** with proper undercuts, making the **margins square** when possible. **Always** use rubber dam.

Before inserting, dry the cavity with alcohol.

In mixing, use a clean glass or porcelain slab and an ivory, bone or onyx (agate) spatula. (Otherwise there will be discoloration of the filling.)

Pour a few drops of the liquid on one end of the slab and the powder on the other. Draw into the liquid and thoroughly incorporate a small portion of the powder. Continue this until the liquid is all used in the mix and enough powder is incorporated to make it reasonably stiff.

To secure uniform consistency, use considerable pressure in spatulation.

Do not knead the material, nor touch it with the hands. Introduce into the tooth direct from the slab. **Be prepared to insert the filling immediately after you have brought the mix to the proper consistency as it sets more rapidly than the oxy-phosphates. In very humid weather this material will set more rapidly than under normal atmospheric conditions.** Insert as an amalgam, using considerable pressure.

Fill the cavity full and even but without too great excess, as to remove this excess without care may result in chipping.

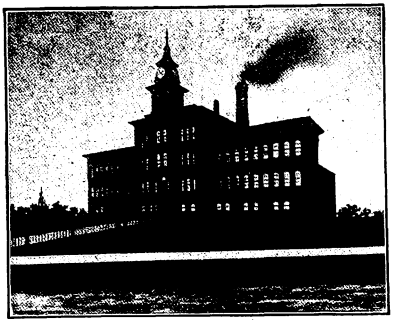
After the filling has partially set, **trim** and **polish** under vaseline with non-metalic instruments and celluloid strips also coated with vaseline. Use nothing in finishing that will scratch the surface or discolor the filling. Polish until the filling is perfectly smooth and the full translucency of tooth structure brought out.

Cleanse with alcohol and cover the filling with paraffine, allowing it to remain for at least twenty minutes; a half hour is better.

NOTE.—Translux contains elements never before employed in a dental filling material. Therefore, do not mix Translux powder or liquid with the liquid or powder of any other preparation. Always keep the stopper in the powder bottle. Always keep the liquid bottle sealed.

Always shake well the liquid bottle before using. By observing this, the liquid will remain uniform in nature and may be used to the last drop.

If these directions are carefully followed, fillings of great permanency, matching perfectly the tooth structure in nature and appearance, will be secured.



OUR FACTORY

There is not a dark corner in this building

Plenty of light and air for every man

¶ Good workmen appreciate these things and it shows in the output of the factory.

¶ Examine the materials, workmanship and finish.

¶ **Note** that **Bronze** not brass is used in the castings.

¶ You must decide as almost 25000 Dentists and Physicians have done that the **Clark Fountain Spittoon** is the best. Every part warranted.

Prices from $35.00 to $65.00
YOUR DEALER STOCKS THEM

A. C. CLARK & COMPANY

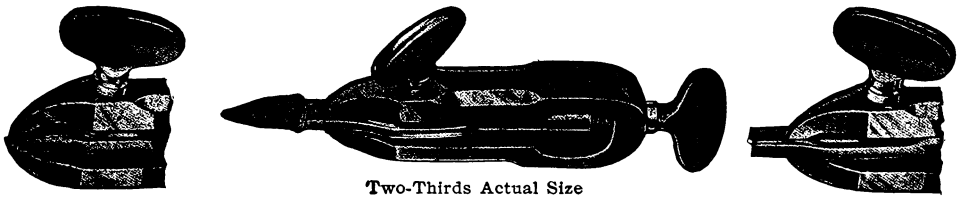
GRAND CROSSING, CHICAGO, U. S. A.

52 Shaftesbury Avenue
LONDON, ENGLAND

94 Mauerstrasse
BERLIN, W. GERMANY

The Little Giant Pin Puller

is like an electric engine. Once used, you regret that you did not realize its values sooner.



Two-Thirds Actual Size

PRICE $3.00

Will pull any broken off crown pin or post it is possible to get hold of. Is provided with a bearing on both sides of beaks so that pressure is brought to bear on the root on both sides of the pin, thereby doing away with any probability of splitting the root by a one-sided twisting motion.

DIRECTIONS:—Draw bars back by turning thumb screw at rear to the left, grasp the pin by turning thumb screw on the side, then bring pressure on root by turning rear thumb screw to right. Should pin be broken off flush with root end, countersink by using large sized inverted cone bur held at right angle to long axis of root on labial side and the same sized bur in right angle on lingual side. This will make sufficient depression to get a good hold of pin without changing the outside of the root at all.

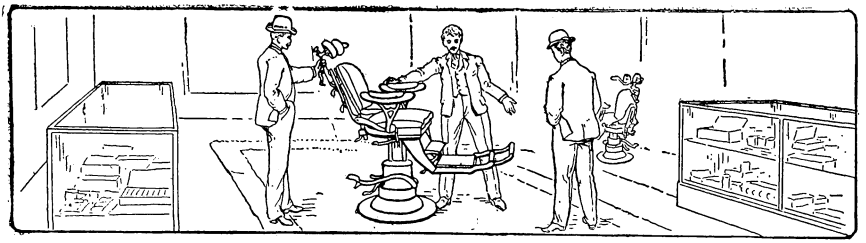
FOR SALE BY ALL DEALERS AND

F. H. SKINNER, **72 East Madison Street, Chicago, Ill.**

THE PECK INVESTMENT COMPOUND

A Perfect Investment is the key to a successful Cast Gold Inlay. The PECK INVESTMENT Compound is the one advocated by DOCTOR WM. TAGGART the father of the CAST INLAY SYSTEM. Order a can immediately from your Dental Depot. **It insures perfect results.** Price per can, $1.00.

ARTHUR E. PECK, M. D., D. D. S.
403 MEDICAL BLOCK
MINNEAPOLIS



What you need in a Dental Chair.

That it pumps up with minimum effort; be stable at all elevations; have even, gentle lowering action under perfect control. That it may be tilted to exactly the desired angle of light and access; that the headrest be comfortable and easily adaptable. A dental chair should be under such control that in emergencies the body may tip and the back lower instantly to positions favoring resuscitation. The chair should be capable of adaptation to fit children. All these advantages are found in

Imperial Columbia Chairs

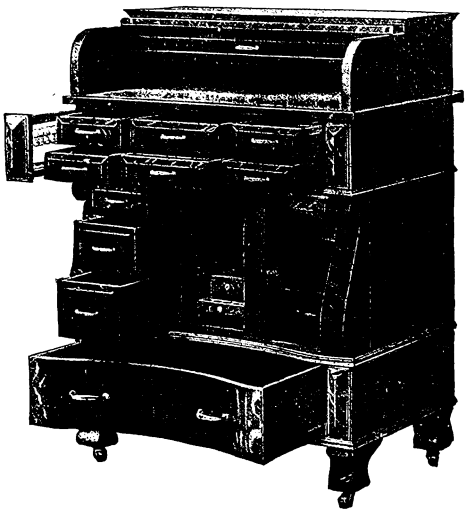
in their highest form. The lifting device is perfect. It raises the chair so that the seat is 37 inches from the floor and lowers it gently and smoothly to a position only 17 inches from the floor. Tilting of the body is governed by a new device which permits getting the exact angle desired. The back lowers easily and smoothly and when lifted locks by simply releasing. This back is so formed that when lowered the patient's head is not pulled from the headrest but headrest and back maintain their established relation. A child's chair of proper proportions and easy of access is contained, folded within the adult back.

The Ritter Dental Mfg. Co.,

Rochester, N. Y.

C 839

Cabinet No. 22



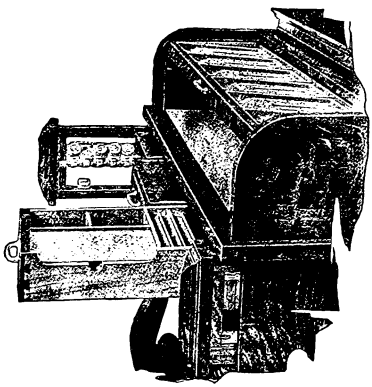
YOU need not be an expert in furniture to see and to feel that Cabinet No. 22 is the creation of an expert deeply interested in his work, and the handiwork of men who know how. The best skilled labor is used, and each workman is drilled and drilled not to see how quick or how cheap but how well his work can be done. In every instance absolutely perfect work is required.

¶ But the high quality of workmanship is not the only thing that might attract your attention, were you to see this cabinet. It is a marvel of convenience and is full of practical features invented by men in daily touch with dentists.

¶ At first glance you might think this a so-called "low" cabinet and lose interest at the start, but the raising of the curtain quickly undeceives you. A long instrument drawer is disclosed within easy focus of the eye. This drawer presents to you at one motion your entire outfit of long-handled instruments, and when you are through with them another motion puts them out of the way again. The instruments are all held in white enameled iron trays, sterilizable at will with the instruments.

¶ Beneath is another long drawer for pliers, mouth mirrors and other instruments of this nature, and above is a drawer for burs.

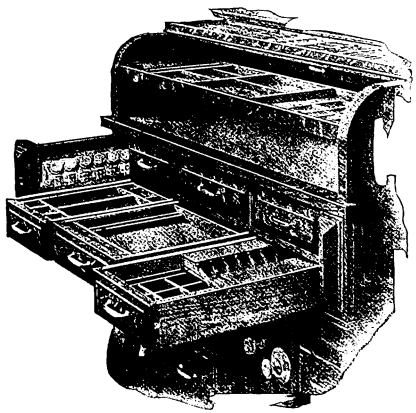
¶ The large working surface is of pure white vitrilite, ideal for the purpose for which we have adapted it.



Aseptic Instrument Trays, Cement Slab and Drawer, Medicine Closet and Bottles, etc.

¶ You cannot think of a thing in the way of conveniences we have not arranged in advance for you. You will find a drawer for cement and places for the spatulas, and, held securely in place horizontally, but removable, a vitrilite cement slab honed on both sides; compartments for cotton rolls, ingeniously arranged places for strips and disks, a rubber dam drawer in which may be kept not only various thicknesses of rubber dam but the clamp forceps, punch and clamps all together and places for your forceps with compartments for gum lances so they will not become dulled.

¶ Concealed behind a panel door is a safe of fire-proof construction, as burglar-proof as any other good safe, and with conveniences for keeping valuables and account books.



Drawers for Engine Instruments, General Operating Tools, Strips and Disks, Forceps, Rubber Dam and Appliances and Medicines

¶ In our limited space we cannot tell you all the features contained in this cabinet, but we publish a catalogue in which is a full description.

¶ May we send you one ?

PRICES

Cabinet No. 22, Mahogany . . .	$145
Cabinet No. 22, Quart'd Oak (any finish)	130
If safe is wanted, add	20

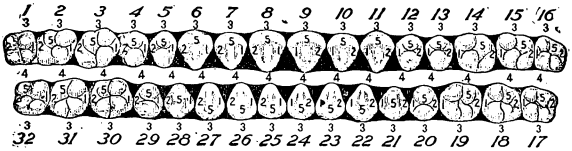
The Ransom & Randolph Co.

Makers of Quality Cabinets :: TOLEDO, OHIO, U. S. A.

BANNISTER'S IMPROVED DENTAL REGISTER

Mr. Frank Kirby Residence East Toledo

Reference J. M. Townsend Street Front No. 967



SURFACES—Mesial, 1; Distal, 2; Labial and Buccal, 3; Lingual, 4; Incisal Edge and Occlusal, 5; Disto-Lingual Groove, 6; Buccal-Pit, 7. Numerals 6 and 7 not shown in the cut.

DATE	No.	SERVICES	FOR	TIME Hrs.	TIME Min.	Cr.	Dr	Check
Nov 18	10 2	G.				3 00		
	14 2	A.				2 00		
	10 2	G. Mrs Kirby				4 00		
	28 2	G. "				3 00		
	31 2	G. "				4 00		
	26 2	G. Miss Florence				3 00		
	21	Ex. "				1 00		
	10 2	G. Willard				2 00		

CUT TWO-THIRDS ACTUAL SIZE

IN REGISTERING fillings, each tooth is represented by a prominent numeral, while the location of a filling is represented by a smaller numeral. Thus, a filling in the mesial surface of the upper left lateral would be registered as 10^{1}. Complex fillings involving one or more surfaces would be recorded by the employment of several figures. For instance, were a filling placed in tooth No. 9 involving surfaces No. 3 (labial), No. 1 (mesial), No. 5 (incisal edge), and No. 4 (lingual), it would be recorded $9^{3\ 1\ 5\ 4}$.

This is the only Register made in which the account of an entire family may be kept on one page without marking the cuts, and its size (7½ x 8 x 1¼ inches) makes it more convenient for filing away than any other on the market.

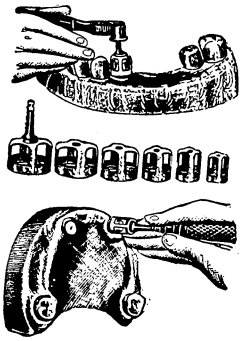
The same cut of teeth is used in Bannister's Appointment Book, Card System and Bill-heads.

Price $3.00

Send for sample outfit fully describing this Register, as well as Bannister's Card System and Bill-heads. Sold by most dealers. If your dealer will not supply you, order direct and write us his name.

THE RANSOM & RANDOLPH COMPANY, TOLEDO, OHIO U. S. A.

The BOWEN
Root and Crown Reducer



THIS instrument revolves around the tooth and reduces it to any size and shape the operator may wish. It can be held at any angle so as to give the proper contour to the tooth. The walls of the instrument are perforated with four openings so that operator may see tooth while instrument is in motion.

It accomplishes results rapidly.

It prevents lacerating the Gum Tissue.

It leaves the angles uniform.

It prevents heating of the tooth and pain to the patient.

It prevents grinding the approximate tooth, and enables one to remove difficult shoulders.

These instruments are made of high-grade steel charged with flint. They are put up in sets of six, and are in sizes so as to conform to any tooth, upper or lower. The two smaller ones can be used to grind the roots for bands for Richmond Crowns as shown in cut.

Full Instructions with each set Sent Postpaid.

PRICE, $2.50 per Set of Six

Includes one special Mandrel

Set of Three Reducers, $1.50

Single Reducers, 75c.

Bowen Crown Reducer Co.

304 Eggleston Avenue

Cincinnati, O.

INCREASE YOUR PRACTICE

by mailing to the people living in your locality copies of "DENTAL COMMONSENSE." The use of these booklets is especially indicated in the smaller towns and villages. ¶ The subject matter is illustrated and written up in very attractive form ¶ These booklets have helped some dentists to a much larger practice, and it is doubtful if they have ever been used in your locality, but it is certain that their use would help you to build a larger practice, as they make people think about their teeth ¶ Sample copy mailed for 5 cents

"DENTAL COMMONSENSE,"

149 Gladstone Avenue Detroit, Michigan

The Value of Any Article is What it will Fetch

If it commands more money, the correct assumption is that it is better, but if it not only commands more money, but in addition has a far larger sale than any of its cheap competitors, then it must unquestionably be vastly superior.

Dr. R. B. Waite's Local Anaesthetic

costs more money than most of its imitators--yet, its

Annual Sale in England to Dentists Alone Exceeds 30,000 Ounces

and is increasing year by year. There is only one better proof than that of its value, and that is to test it for yourself. It's a Local Anaesthetic you can ALWAYS depend on for successful results. You get no sloughing, no after ill-effects, and you get no failures.

ONE DOLLAR BOTTLE FREE

upon receipt of twenty-five cents to pay for postage and packing. We keep a record of all Dentists and Physicians, and will positively only furnish one bottle in this way. If you have had a trial oz. since May 1, 1907, don't send again—your money will be returned.

Price

1 oz. $1.00; 2 ozs. $2.00; 6 ozs. $5.00; 12 ozs., $10.00; 20 ozs., $15.00

THE ANTIDOLAR MFG. CO.

20 Main St., Springville, N. Y., U.S.A.

LOW CABINETS

LOW CABINETS have come to stay. We were the first to place them on the market, and their popularity has increased day by day.

The No. 58 is an especially convenient piece of furniture.

Its medicine closet is large, and entirely separate from the instruments.

Its twenty-one instrument drawers are *correctly* partitioned for *all* your instruments. The roll front covers all these drawers, and it is provided with a good lock.

Large drawers furnish the necessary place for towels and the other large supplies.

The working surface is roomy and can be furnished with a glass or opalite top, if desired.

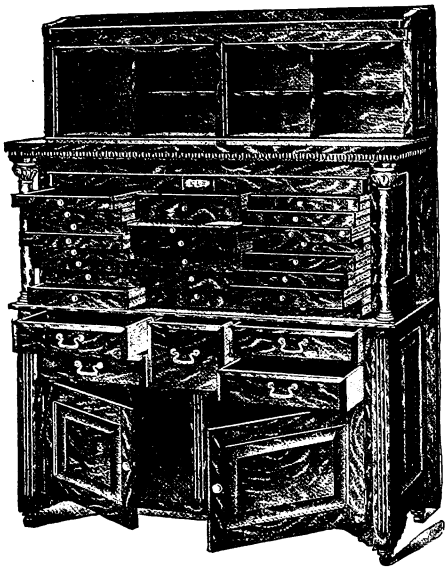
The long shelf above the medicine closet is very convenient and it has two large closets in the base.

Its workmanship is first-class, and its finish is the result of twenty-five years' experience in finishing *business* furniture.

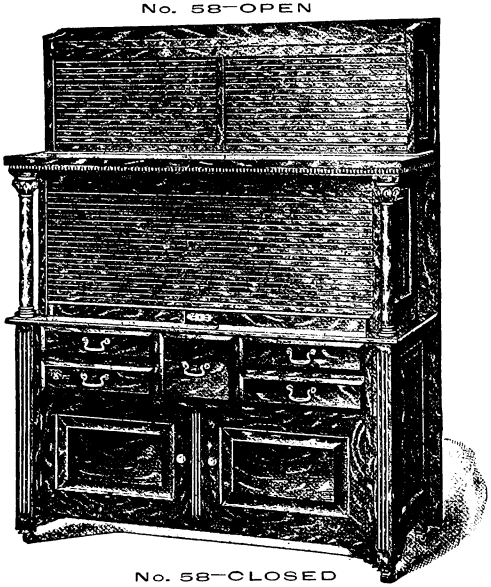
Send for our catalog for complete description of this and other low cabinets.

PRICE

Quarter-sawed Oak, any finish, dull or polished	$95.00
Mahogany, any finish, dull or polished,	110.00
Glass or Opalite top, extra .	10.00



No. 58—OPEN

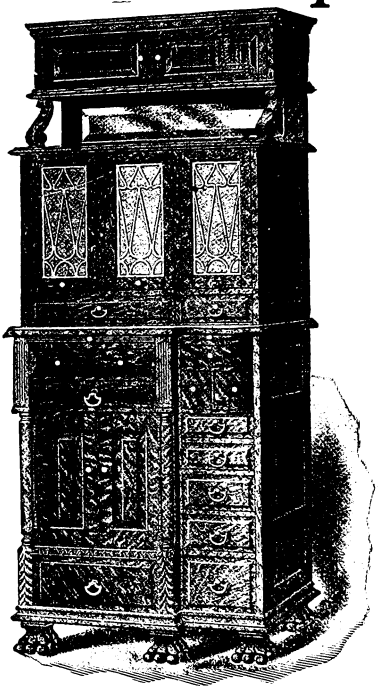


No. 58—CLOSED

AMERICAN CABINET COMPANY

TWO RIVERS, WIS.

Two Important Points



IN THE MANUFACTURE OF DENTAL CABINETS

Seasoning of Lumber. Lumber should be air dried as well as kiln dried. We carry five million feet in stock, which insures you against the trouble caused by poorly seasoned material.

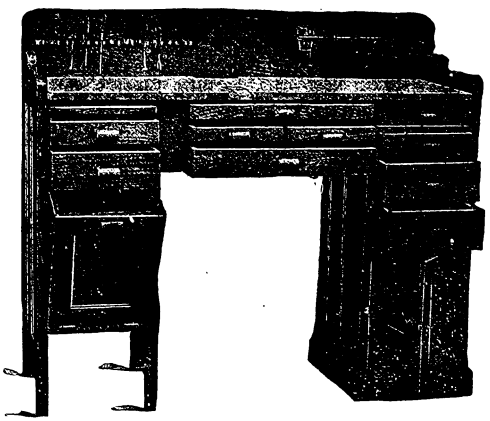
Finish. We have been finishing nothing but **business** furniture, much of which meets with harder usage than a Dental Cabinet, for twenty-five years. We give you a finish, either dull or polished, that will prove both durable and beautiful.

Cabinet No. 55

The No. 55 is excelled by no other Dental Cabinet in workmanship and finish. Every piece of wood in it is selected with special care. Quarter-sawed Oak, Golden, Weathered, Antwerp and Flemish finishes and Mahogany are carried in stock. The numerous drawers and compartments calculated to accommodate all instruments and supplies are nicely finished, and have Bird's-eye Maple bottoms, where not lined with Cabinet cloth. There is no finer combination of convenience and beauty for the price.

Price

Quarter-sawed Oak $115.00
Mahogany 130.00



No. 10. Bench

This is one of the most popular Benches. It provides a convenient place for all instruments and supplies used in the laboratory, and has a large working surface.

Price

Hard Maple Top $25.00

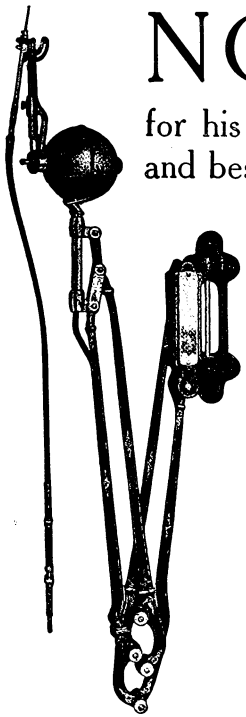
Marble or Asbestos tops furnished, if desired, at small additional expense.

Write us or any prominent dealer for catalog.

The American Cabinet Company

Eastern Office and Warehouse
Rahway, N. J.

Main Office and Factories
Two Rivers, Wis.



No. 5 Folding Bracket Engine shown in the folded position with the cable arm

NOW IS THE TIME

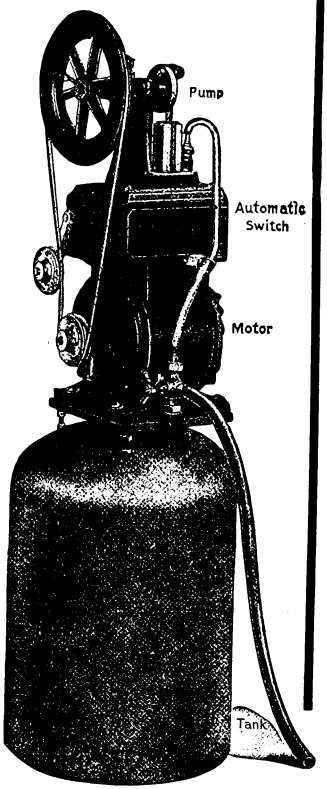
for the up-to-date dentist to equip for his fall and winter work by selecting the latest and best appliances. A good equipment means more accomplished, better work, less fatigue, and gives tone to the office which impresses the patient. Our

Folding Bracket Electric Engine

has now been on the market for over a year, and has proven to be the most popular and successful electric dental engine ever brought out. It can be used with the all-cord arm or the cable arm.

The Automatic .. Compressor Unit

is the latest and best device for providing the office and laboratory with a constant supply of compressed air.



No. 37 Automatic Compressor Unit shown with the cover removed

Our Electric Switchboards . . .

have been improved in many details, and several new styles have been added to our list. Our switchboard is a useful and handsome addition to any office.

We manufacture all the different appliances that are used with compressed air, and the instruments that are used with the switchboard

Send for Descriptive Circulars and Prices

ELECTRO DENTAL MANUFACTURING CO.

No. 1228 CHERRY STREET
PHILADELPHIA, PENNSYLVANIA

Would You Bet a Tenspecker on it?

Would you bet $10.00 that a fountain spittoon without an overflow through the side of the bowl like a washstand wouldn't run over on your floor sometime within the next ten or twelve years? If you would, the chances are you would lose your bet.

It is a physical impossibility to make a Weber Special run over on your floor, and if you use it you will never have to listen to any bad language from the man downstairs or get mixed up in any law suits with him.

What earthly sense is there in taking a chance about getting into trouble when you don't have to?

Write for the book that goes into details about the Weber product. We talk a good deal about this overflow feature, but there are a dozen other points of superiority equally palpable to the discriminating buyer. The book, of course, is sent free.

LEE S. SMITH & SON CO.

PITTSBURGH, PENNSYLVANIA

Copper-Carbo Cutters

Are Preferred to Diamond Disks

WHY?

Seven Good Reasons

1st—They cut fully as fast, **and at the edge.**

2d—They can be run dry without injury.

3d—They are not so likely to catch and buckle.

4th—Cleansing is more perfectly accomplished, therefore asepsis is more perfect.

5th—They are not injured by sterilizing.

6th—The initial cost is nominal, and

7th—The cost of operating insignificant.

SLICING A TOOTH

¶ A flat Copper-Carbo Cutter dipped in Copper-Carbo Powder will separate mesially in a surprisingly short time, cutting a clean slice off, thus avoiding injury to adjacent teeth. Separate distally in same manner with a large concave cutter. A small concave cutter will finish up to and under the gums.

¶ Four sizes each, flat and concave disks, cover every requirement. Full instructions for use with each set.

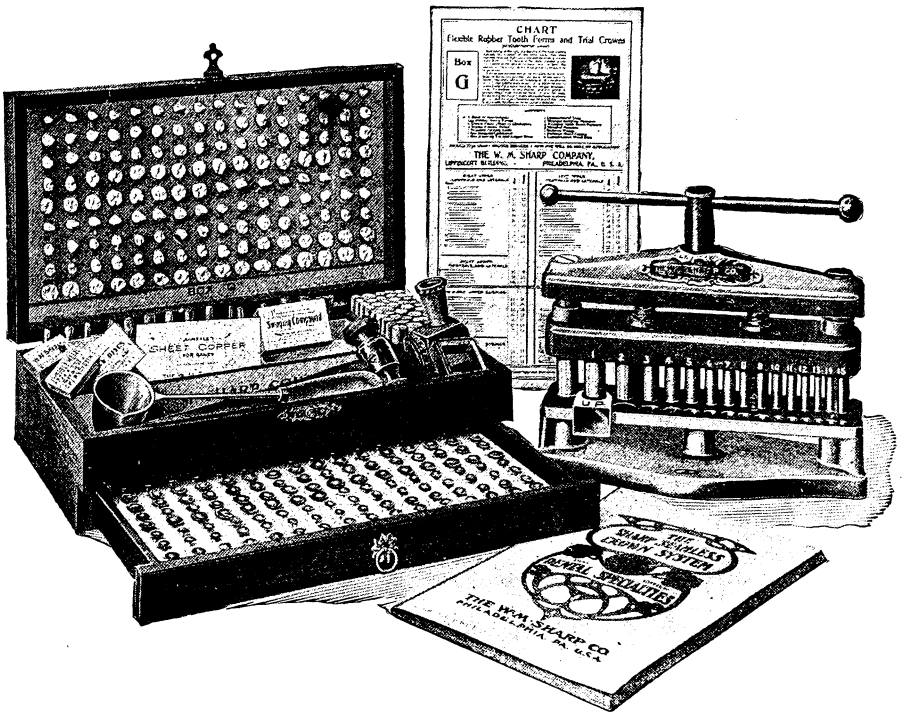
Price, 60c. the set of eight, and 15c. the jar of Copper-Carbo Powder.
By mail on receipt of price. Your dealer. or direct.

Buffalo Dental Manufacturing Company

BUFFALO, N, Y., U. S. A.

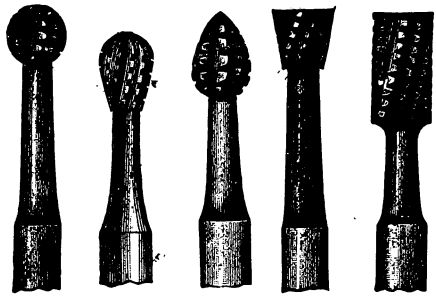
Do you desire further Copper-Carbo Information?

The Sharp Seamless Crown Outfit No. 4



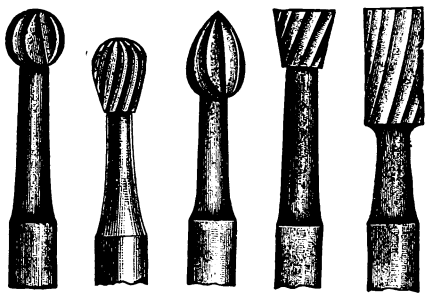
THIS gives you some idea of the general appearance of this widely known outfit. It does not, however, show the splendid results attained in using the system. ¶ We would like to have the privilege of a personal demonstration of this valuable invention in its wide adaptation to Crown and Bridge work, but as that is not possible for all readers of this journal, the next best thing is a copy of our descriptive booklet. ¶ It will be mailed free upon receipt of your address.

The W. M. Sharp Co. 46 North Twelfth Street
Philadelphia, Pa., U.S.A.



"Spiral Leaf"

Ivory's Spiral Leaf and New Process Burs



"New Process"

THESE Burs are made of the finest steel, manufactured especially for this purpose, turned and cut by machines; they are absolutely true and accurate, and the blades are cut just at the proper angle for cutting tooth substance. Having more blades than is common with most Burs makes them smooth and even cutters, and leaves the enamel borders smooth and ready for the filling. These Burs are tempered by a secret process of our own, and this is one of our strongest claims for the cutting and lasting qualities of these Burs, and in the finishing they are stoned to a razor edge.

These are some of the reasons for the superior cutting qualities of these Burs, and why we have so many testimonials as to their worth from dentists who are using them. Our object has been to make an absolutely perfect Reamer that will cut tooth substance quickly and smoothly and with the least amount of pain, and will hold their edge and shape for the longest possible time. The teeth of the Spiral Leaf Bur run in a spiral form around the head of the Bur, the teeth of the next blade cutting what the others leave. These cut enamel readily. They are made in all sizes and all styles of Hand Piece except No. 6 H. P.

Ivory Spiral Leaf Burs, sizes	1 to 8,	per dozen	$ 2.00
" " " " "	1 to 8,	per half-gross	10.50
" " " " "	1 to 8,	per gross in case	21.00
" New Process Burs, "	1 to 8,	per dozen	1.50
" " " " "	1 to 8,	per half-gross	7.50
" " " " "	1 to 8,	per gross in case	15.00

J. W. IVORY, Manufacturer

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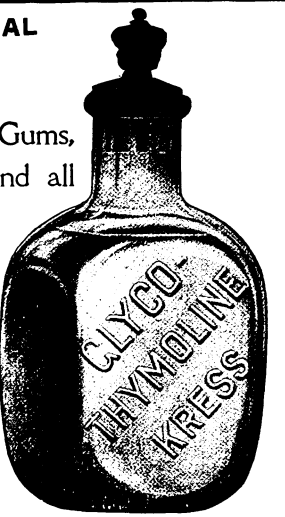

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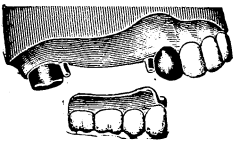

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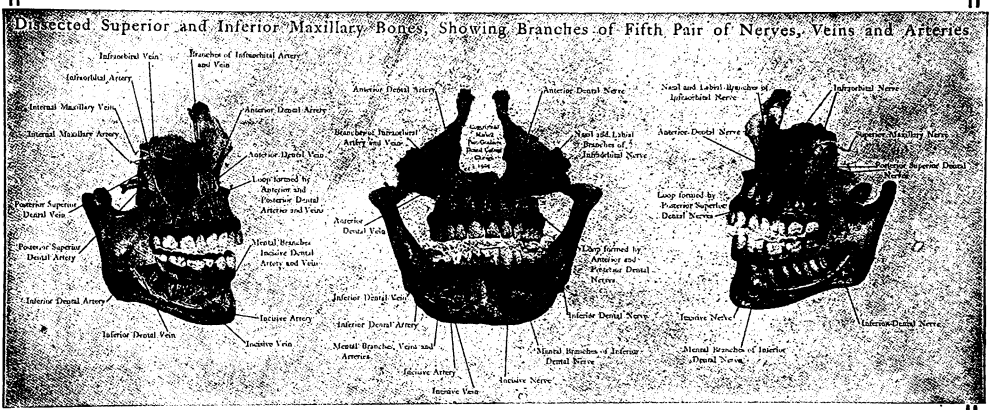

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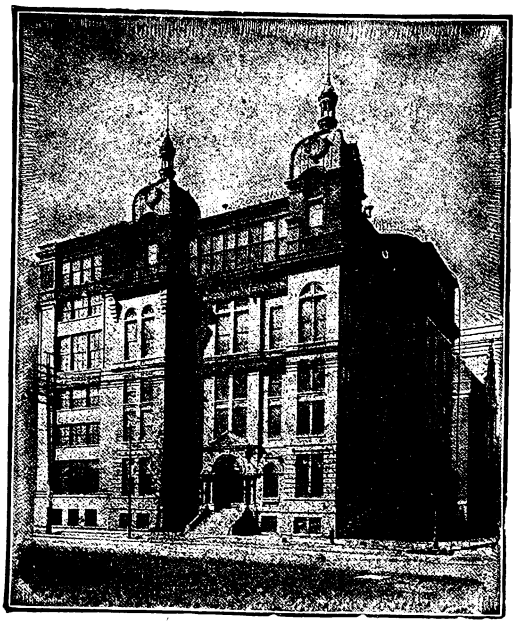

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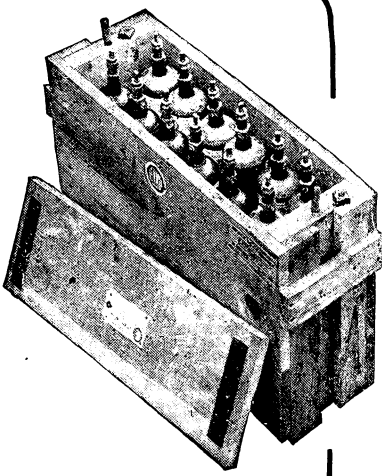

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